Table 1.4-1
Chronology of Events
Ascon Landfill Site

1938-1971	Rotary drilling muds, wastes and waste water brines were the major wastes deposited at the site. Garrish Brothers owned and operated the facility from 1938-1950. Steverson Brothers owned and operated the facility from 1950-1971.
1949	Department of Health Services issued permit to Garrish Brothers to operate the site as a rotary mud dump.
1950	Twenty-two areas used for oil field wastes. Ponds designed to flow to the east with 25 to 30 foot berms.
1955	Pit E was in use.
1957-1971	"Unusable oil" dumped by General Edison Power Co. (256,000 gals.) in big lagoon (Carl Steverson of Steverson Bros., Inc.).
1957	Three-hundred barrels of chromic and sulfuric acid wastes dumped into Pits C, D and F (M & M Pumping, 12,600 gallons for period).
1958	Shell Chemical disposed of "dregs from Bunker C fuel oil" containing "light hydrocarbon" conglomerate and styrene tar to Pit F.
1951-1959	Aluminum and Magnesium, Inc., disposed of aluminum slag and other process wastes (magnesium chloride and potassium chloride) at a rate not exceeding 25 tons per month (maximum 2,700 tons for period).
1958-1971	AQMD received persistent complaints of odors from the site.
1962	Shell Chemical deposited corrosive materials.
1964	Shell Chemical deposited polyester resins and phenolic-laden compounds (20 percent free phenol).
1962-1964	Numerous mercaptan and styrene odors reported. Most of the styrene waste went to Pit F. Some may have gone to Pit E. Pit E was reportedly covered in 1964 with soil.
1970	Steverson Brothers' records and documents destroyed by fire.
1971	Oily waste disposed in Pits A and B by Douglas Oil.
1971	All oilfield waste disposal ceased.
1971-1984	Class III inert wastes accepted.
1980-1984	Site Sampling conducted by Oil Well Research, Inc.
	Site Investigation conducted by Woodward-Clyde Consultants.
	Site Characterization conducted by J.W. Barrington.
	Site Investigation conducted by Ecology and Environment, Inc.

Table 1.4-1
Chronology of Events
Ascon Landfill Site

1980-1984 (continued)	Site Investigation conducted by Orange County Health Department.
	Site evaluated by U.S. EPA for inclusion on the National Priorities Ranking List.
1984	The site was purchased by ASCON Properties. All disposal activities ceased.
	The site was listed on the State Department of Health Services Toxic Substances Control Program, Site Ranking and Priorities List. ASCON Properties started negotiations with the Department for site cleanup.
	The Regional Water Quality Control Board became responsible for the cleanup of onsite pits.
	Site characterization report prepared by Lockman & Associates.
	ASCON Ad-Hoc Committee was established.
1985	Waste characterization study prepared by Proteck Environmental.
1987	AQMD issues odor violation report to ASCON Properties.
1987-1988	Site Investigation conducted by H.V. Lawmaster.
	Site Investigation conducted by Radian Corporation.
1988	AQMD issued ASCON Properties an excavation permit under Rule 1150.
1989-1990	ASCON Properties filed for protection under Bankruptcy Court.
	NESI Investment Group acquired the site through foreclosure.
1991-1992	NESI executed a Consent Agreement with the DTSC and initiated Site Remediation activities.
	NESI prepared Remedial Investigation/Feasibility Study and Removal Action Workplans for the site.
	NESI implemented Remedial Investigation Workplan.
	NESI submitted to AQMD permit application under Rules 203, 1150 and 1166.
1993	NESI Investment Group files for Bankruptcy.
	Property ownership transferred to Signal Mortgage Company.

Table 1.4-1
Chronology of Events
Ascon Landfill Site

1995	Signal Mortgage Company entered into agreement with Savannah Resources Corporation to complete DTSC-required RI/FS and Remedial Action Plan (RAP). Savannah Resources Corporation entered into a Voluntary Cleanup Agreement (VCA) with the DTSC for the oversight, review, and approval of RI/FS and RAP.
1997	RI report and Baseline Health Risk Assessment completed by ESE. California/Nevada Developments, LLC, acquired the interests of Savannah Resources Corporation and assumed responsibility for completion of the RI/FS and RAP.
1998	Treatability testing conducted as a part of the FS.
1999	Pilot Testing conducted as a part of the FS.
2000	Feasibility Study Completed. Draft RAP preparation in progress.
2002	Site groundwater assessment conducted by Project Navigator, Ltd.
2003	Cannery Hamilton Properties, LLC, purchased site from Beach Coast Properties (formerly Signal Mortgage Company). GeoSyntec prepares Draft Groundwater RI and conducts Tidal Study Investigation.
2004-2005	GeoSyntec conducts quarterly groundwater monitoring for RI. (2004) March 17, 2004 -- oil and gas well (Krik Well #80) uncontrolled release on site. March 2004 through January 2005 -- Additional soil and waste investigation in support of Revised Feasibility Study (RFS). September 2004 -- Decision to combine groundwater FS with RFS.
2005	Emergency Action berm strengthening and drilling mud removal
2006	Geosyntec performs supplemental groundwater investigation in the Pit F area, soil gas investigation, site-wide surface emissions survey, and site-wide groundwater sampling

Source for 1938-2000 information: ISCO Industries/ITARA Engineers (1992) and ESE (1997).

Table 1.4-2
Pit Locations and History
Ascon Landfill Site

Pit	Site Quadrant	Waste
A & B	NW	Oily wastes disposed of by Douglas Oil - 1971; Pit not shown in 1973 photograph.
C & D	SE	A portion of 300 barrels of chromic and sulfuric acid disposed of by M & M Pumping - 1957; Pit not shown in 1978 photograph.
E	SE	Styrene - 1962 to 1964; pit covered with soil in 1964. Liquid present in pit in 1965 photograph; office trailer located over pit area in 1973 photograph.
F	SE	Styrene tar disposed of by Shell Chemical - 1957; Synthetic rubber disposed of by Shell Chemical. Pit still present, covered with tarp.
G	SE	Waste of unknown source; Pit not shown in 1978 photograph.
H	NW	Waste of unknown source; Pit not shown in 1973 photograph.

ESE's Source: Radian (1988)
Reference: ESE (1997a)

Table 2.11-1
Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
AW-1	6.23	8.69	3/15/2004[2]	-	-	-	-	-	-
			6/7/2004	9.11	-2.88	-0.42	-	-	0.0
			9/7/2004	9.32	-3.09	-0.63	-	-	-
			12/7/2004	8.29	-2.06	0.40	-	-	0.0
			12/4/2006	8.89	-2.66	-0.20	-	-	0.0
AW-1A	10.00	12.46	3/15/2004	12.51	-2.51	-0.05	-	-	3.1
			6/7/2004	13.13	-3.13	-0.67	-	-	0.0
			9/7/2004	13.07	-3.07	-0.61	-	-	0.0
			12/7/2004	12.08	-2.08	0.38	-	-	0.0
			12/4/2006	12.54	-2.54	-0.08	-	-	0.0
AW-2	5.62	8.08	6/7/2002	8.80	-3.18	-0.72	-	-	-
			8/9/2002	8.78	-3.16	-0.70	-	-	-
			10/7/2002	8.71	-3.09	-0.63	-	-	-
			6/26/2003	8.41	-2.79	-0.33	-	-	0.0
			10/14/2003	8.92	-3.30	-0.84	-	-	0.0
			11/12/2003	8.81	-3.19	-0.73	-	-	0.0
			12/29/2003	8.45	-2.83	-0.37	-	-	0.0
			3/15/2004	7.87	-2.25	0.21	-	-	0.7
			6/7/2004	8.31	-2.69	-0.23	-	-	0.0
			9/7/2004	8.45	-2.83	-0.37	-	-	0.0
			12/7/2004	7.44	-1.82	0.64	-	-	0.3
			12/4/2006	7.85	-2.23	0.23	-	-	0.0
AW-3	8.38	10.84	6/7/2002	11.87	-3.49	-1.03	-	-	-
			8/9/2002	11.97	-3.59	-1.13	-	-	-
			10/7/2002	11.92	-3.54	-1.08	-	-	-
			6/26/2003	11.43	-3.05	-0.59	-	-	0.0
			10/14/2003	11.96	-3.58	-1.12	-	-	0.0
			11/12/2003	11.90	-3.52	-1.06	-	-	0.0
			12/29/2003	11.61	-3.23	-0.77	-	-	0.0
			3/15/2004	10.99	-2.61	-0.15	-	-	0.5
			6/7/2004	11.10	-2.72	-0.26	-	-	0.0
			9/7/2004	11.54	-3.16	-0.70	-	-	0.0
			12/14/2004	10.46	-2.08	0.38	-	-	0.0
			12/4/2006	11.17	-2.79	-0.33	-	-	0.0
AW-4	6.01	8.47	6/7/2002	8.10	-2.09	0.37	-	-	-
			8/9/2002	8.35	-2.34	0.12	-	-	-
			10/7/2002	7.85	-1.84	0.62	-	-	-
			6/26/2003	8.11	-2.10	0.36	-	-	0.0
			10/14/2003	8.73	-2.72	-0.26	-	-	0.0
			11/12/2003	8.58	-2.57	-0.11	-	-	0.0
			12/29/2003	8.05	-2.04	0.42	-	-	0.0
			3/15/2004	7.51	-1.50	0.96	-	-	0.7
			6/7/2004	7.02	-1.01	1.45	-	-	0.0
			9/7/2004	7.79	-1.78	0.68	-	-	0.0
			12/7/2004	7.25	-1.24	1.22	-	-	0.0
			12/4/2006	7.68	-1.67	0.79	-	-	0.0
AW-4A	7.32	9.78	3/15/2004	8.90	-1.58	0.88	-	-	7.4
			6/7/2004	9.10	-1.78	0.68	-	-	0.0
			9/7/2004	9.19	-1.87	0.59	-	-	0.0
			12/7/2004	8.61	-1.29	1.17	-	-	0.0
			12/4/2006	9.04	-1.72	0.74	-	-	0.0

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Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

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AW-5	4.86	7.32	6/7/2002	7.45	-2.59	-0.13	-	-	-
			8/9/2002	7.61	-2.75	-0.29	-	-	-
			10/7/2002	7.20	-2.34	0.12	-	-	-
			6/26/2003	7.08	-2.22	0.24	-	-	0.8
			10/14/2003	7.69	-2.83	-0.37	-	-	0.0
			11/12/2003	7.56	-2.70	-0.24	-	-	0.0
			12/29/2003	7.11	-2.25	0.21	-	-	0.0
			3/15/2004	6.60	-1.74	0.72	-	-	0.6
			6/14/2004	6.79	-1.93	0.53	-	-	0.0
			9/7/2004	6.82	-1.96	0.50	-	-	0.0
			12/7/2004	6.68	-1.82	0.64	-	-	0.0
			12/4/2006	6.65	-1.79	0.67	-	-	0.0
AW-8	5.78	8.24	6/7/2002	11.50	-5.72	-3.26	-	-	-
			8/9/2002	11.60	-5.82	-3.36	-	-	-
			10/7/2002	11.44	-5.66	-3.20	-	-	-
			6/26/2003	11.26	-5.48	-3.02	-	-	0.0
			10/14/2003	11.69	-5.91	-3.45	-	-	0.1
			11/12/2003	11.59	-5.81	-3.35	-	-	0.0
			12/29/2003	11.38	-5.60	-3.14	-	-	0.0
			3/15/2004	10.92	-5.14	-2.68	-	-	0.7
			6/7/2004	11.11	-5.33	-2.87	-	-	0.0
			9/7/2004	11.15	-5.37	-2.91	-	-	0.0
			12/7/2004	10.34	-4.56	-2.10	-	-	0.0
			12/4/2006	10.80	-5.02	-2.56	-	-	0.0
B-2[3]	24.54	27.00	6/7/2002	NM	NA	NA	P/NM	NA	-
			8/9/2002	28.99	-4.45	-1.99	-	-	-
			7/8/2002	ND	NA	NA	26.8	NA	-
			7/16/2002	28.99	-4.45	-1.99	-	-	-
			7/22/2002	28.99	-4.45	-1.99	-	-	-
			7/29/2002	29.06	-4.52	-2.06	-	-	-
			10/7/2002	29.05	-4.51	-2.05	28.8	0.25	-
			6/26/2003	31.15	-6.61	-4.15	28.34	2.81	0.0
			10/15/2003	ND	NA	NA	28.79	NA	0.0
			11/13/2003	ND	NA	NA	28.76	NA	0.0
			12/30/2003	ND	NA	NA	28.65	NA	0.0
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	26.72	-2.18	0.28	26.5	0.22	2.7
B-4	18.84	21.30	6/7/2002	21.50	-2.66	-0.20	-	-	-
			8/9/2002	21.62	-2.78	-0.32	-	-	-
			10/7/2002	21.31	-2.47	-0.01	-	-	-
			6/26/2003	21.28	-2.44	0.02	-	-	0.2
			10/14/2003	21.84	-3.00	-0.54	-	-	0.2
			11/12/2003	21.68	-2.84	-0.38	-	-	0.0
			12/29/2003	21.22	-2.38	0.08	-	-	0.0
			3/15/2004	20.70	-1.86	0.60	-	-	0.4
			6/7/2004	20.98	-2.14	0.32	-	-	0.0
			9/7/2004	20.95	-2.11	0.35	-	-	0.0
			12/7/2004	20.40	-1.56	0.90	-	-	0.0
			12/4/2006	20.80	-1.96	0.50	-	-	0.0
B-4A	19.70	22.16	3/15/2004	21.60	-1.90	0.56	-	-	15.6
			6/7/2004	21.77	-2.07	0.39	-	-	16.2
			9/7/2004	21.86	-2.16	0.30	-	-	21.4
			12/7/2004	21.32	-1.62	0.84	-	-	20.1
			12/4/2006	21.72	-2.02	0.44	-	-	23.2

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B-5	25.67	28.13	6/7/2002	NM	NA	NA	27.8	NA	-
			7/8/2002	ND	NA	NA	27.1	NA	-
			8/9/2002	NM	NA	NA	P/NM	NA	-
			10/7/2002	NM	NA	NA	28.36	NA	-
			6/26/2003	ND	NA	NA	28.23	NA	0.0
			10/22/2003	ND	NA	NA	28.51	NA	NM
			11/13/2003	ND	NA	NA	28.78	NA	43.4
			12/30/2003	ND	NA	NA	28.13	NA	1.6
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	27.27	NA	11.4
			12/4/2006	ND	NA	NA	29.84	NA	0.0
B-6	8.05	10.51	6/7/2002	11.27	-3.22	-0.76	P	-	-
			7/8/2002	11.42	-3.37	-0.91	11.41	0.01	-
			8/9/2002	11.44	-3.39	-0.93	11.43	0.01	-
			10/7/2002	11.35	-3.30	-0.84	11.34	0.01	-
			6/26/2003	10.86	-2.81	-0.35	P	-	33.0
			10/15/2003	ND	NA	NA	11.33	NA	93.7
			11/13/2003	ND	NA	NA	11.38	NA	91.9
			12/30/2003	11.02	-2.97	-0.51	P	-	86.4
			3/15/2004	10.18	-2.13	0.33	P	-	45.9
			6/7/2004	10.79	-2.74	-0.28	P	-	17.3
			9/7/2004	10.88	-2.83	-0.37	-	-	25.9
			12/7/2004	9.91	-1.86	0.60	P	-	92.0
			12/4/2006	10.38	-2.33	0.13	P	-	157.0
B-7	15.11	17.57	6/7/2002	18.30	-3.19	-0.73	-	-	-
			8/9/2002	18.40	-3.29	-0.83	-	-	-
			10/7/2002	18.29	-3.18	-0.72	-	-	-
			6/26/2003	17.98	-2.87	-0.41	-	-	0.0
			10/14/2003	18.46	-3.35	-0.89	-	-	0.0
			11/12/2003	18.34	-3.23	-0.77	-	-	0.0
			12/29/2003	17.95	-2.84	-0.38	-	-	0.0
			3/15/2004	17.38	-2.27	0.19	-	-	0.6
			6/7/2004	17.73	-2.62	-0.16	-	-	1.3
			9/7/2004	17.85	-2.74	-0.28	-	-	0.0
			12/7/2004	16.95	-1.84	0.62	-	-	0.1
			12/4/2006	17.41	-2.30	0.16	-	-	0.0
MW-4	22.23	24.69	6/7/2002	25.97	-3.74	-1.28	-	-	-
			8/9/2002	26.02	-3.79	-1.33	-	-	-
			10/7/2002	25.98	-3.75	-1.29	-	-	-
			6/26/2003	25.44	-3.21	-0.75	-	-	0.0
			10/14/2003	25.95	-3.72	-1.26	-	-	0.0
			11/12/2003	25.92	-3.69	-1.23	-	-	0.0
			12/29/2003	25.61	-3.38	-0.92	-	-	0.0
			3/15/2004	24.97	-2.74	-0.28	-	-	0.2
			6/7/2004	25.29	-3.06	-0.60	-	-	0.0
			9/7/2004	25.45	-3.22	-0.76	-	-	0.0
			12/7/2004	24.56	-2.33	0.13	-	-	0.0

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MW-9	15.03	17.49	6/7/2002	17.68	-2.65	-0.19	-	-	-
			8/9/2002	17.80	-2.77	-0.31	-	-	-
			10/7/2002	17.50	-2.47	-0.01	-	-	-
			6/26/2003	17.43	-2.40	0.06	-	-	0.3
			10/14/2003	17.99	-2.96	-0.50	-	-	0.0
			11/12/2003	17.82	-2.79	-0.33	-	-	0.2
			12/29/2003	17.31	-2.28	0.18	-	-	0.0
			3/15/2004	16.67	-1.64	0.82	-	-	0.9
			6/7/2004	17.05	-2.02	0.44	-	-	0.0
			9/7/2004	17.15	-2.12	0.34	-	-	1.7
			12/7/2004	16.37	-1.34	1.12	-	-	2.7
			12/4/2006	16.78	-1.75	0.71	-	-	10.1
MW-13	6.83	9.29	6/7/2002	10.25	-3.42	-0.96	-	-	-
			8/9/2002	10.29	-3.46	-1.00	-	-	-
			10/7/2002	10.21	-3.38	-0.92	-	-	-
			6/26/2003	9.84	-3.01	-0.55	-	-	0.2
			10/14/2003	10.35	-3.52	-1.06	-	-	0.0
			11/12/2003	10.30	-3.47	-1.01	-	-	0.0
			12/29/2003	10.05	-3.22	-0.76	-	-	0.0
			3/15/2004	9.27	-2.44	0.02	-	-	0.7
			6/7/2004	9.71	-2.88	-0.42	-	-	0.0
			9/7/2004	9.88	-3.05	-0.59	-	-	0.0
			12/7/2004	8.85	-2.02	0.44	-	-	0.0
			12/4/2006	9.40	-2.57	-0.11	-	-	0.0
MW-14	22.73	25.19	6/7/2002	NM	NA	NA	26.25	NA	-
			7/8/2002	26.75	-4.02	-1.56	26.47	0.28	-
			7/16/2002	26.62	-3.89	-1.43	26.61	0.01	-
			7/22/2002	26.63	-3.90	-1.44	26.62	0.01	-
			7/29/2002	26.63	-3.90	-1.44	26.62	0.01	-
			8/9/2002	26.64	-3.91	-1.45	26.63	0.01	-
			10/7/2002	26.44	-3.71	-1.25	26.46	0.2	-
			6/26/2003	ND	NA	NA	25.95	NA	142.0
			10/15/2003	ND	NA	NA	26.54	NA	161.0
			11/13/2003	ND	NA	NA	26.53	NA	172.0
			12/30/2003	ND	NA	NA	26.53	NA	150.0
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	24.98	NA	132.0
MW-15	5.57	8.03	6/7/2002	8.80	-3.23	-0.77	-	-	-
			8/9/2002	8.79	-3.22	-0.76	-	-	-
			10/7/2002	8.71		-0.68	-	-	-
			6/26/2003	8.48	-2.91	-0.45	-	-	0.0
			10/14/2003	8.89	-3.32	-0.86	-	-	0.0
			11/12/2003	8.80	-3.23	-0.77	-	-	0.0
			12/29/2003	8.47	-2.90	-0.44	-	-	0.0
			3/15/2004	7.89	-2.32	0.14	-	-	0.8
			6/7/2004	8.30	-2.73	-0.27	-	-	0.0
			9/7/2004	8.43	-2.86	-0.40	-	-	0.0
			12/7/2004	7.42	-1.85	0.61	-	-	0.0
			12/4/2006	7.85	-2.28	0.18	-	-	0.0

Table 2.11-1
Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
NMW-1	21.28	23.74	6/7/2002	25.70	-4.42	-1.96	-	-	-
			8/9/2002	25.83	-4.55	-2.09	-	-	-
			10/7/2002	25.70	-4.42	-1.96	-	-	-
			6/26/2003	25.40	-4.12	-1.66	-	-	0.0
			10/14/2003	25.92	-4.64	-2.18	-	-	0.0
			11/12/2003	25.79	-4.51	-2.05	-	-	0.0
			12/29/2003	25.49	-4.21	-1.75	-	-	0.0
			3/15/2004	25.13	-3.85	-1.39	-	-	0.4
			6/7/2004	25.30	-4.02	-1.56	-	-	0.0
			9/7/2004	25.18	-3.90	-1.44	-	-	0.0
			12/7/2004	24.44	-3.16	-0.70	-	-	0.0
NMW-2	17.35	19.81	6/7/2002	20.26	-2.91	-0.45	-	-	-
			8/9/2002	20.39	-3.04	-0.58	-	-	-
			10/7/2002	20.11	-2.76	-0.30	-	-	-
			6/26/2003	20.04	-2.69	-0.23	-	-	0.2
			10/14/2003	20.60	-3.25	-0.79	-	-	0.0
			11/12/2003	20.45	-3.10	-0.64	-	-	0.0
			12/29/2003	20.02	-2.67	-0.21	-	-	0.0
			3/15/2004	19.48	-2.13	0.33	-	-	0.6
			6/7/2004	19.68	-2.33	0.13	-	-	0.0
			9/7/2004	19.75	-2.40	0.06	-	-	0.0
			12/7/2004	19.23	-1.88	0.58	-	-	0.0
			12/4/2006	22.10	-4.75	-2.29	-	-	0.0
MW-16	7.01	9.47	8/9/2002	10.90	-3.89	-1.43	-	-	-
			10/7/2002	10.75	-3.74	-1.28	-	-	-
			6/26/2003	10.21	-3.20	-0.74	-	-	0.2
			10/14/2003	10.81	-3.80	-1.34	-	-	0.0
			11/12/2003	10.69	-3.68	-1.22	-	-	0.0
			12/29/2003	10.42	-3.41	-0.95	-	-	0.0
			3/15/2004	9.67	-2.66	-0.20	-	-	1.1
			6/7/2004	9.96	-2.95	-0.49	-	-	0.0
			9/7/2004	10.09	-3.08	-0.62	-	-	0.0
			12/7/2004	9.25	-2.24	0.22	-	-	0.0
			12/4/2006	9.64	-2.63	-0.17	-	-	0.0
MW-17	5.17	7.63	8/9/2002	11.45	-6.28	-3.82	-	-	-
			10/7/2002	11.35	-6.18	-3.72	-	-	-
			6/26/2003	11.13	-5.96	-3.50	-	-	0.0
			10/14/2003	11.49	-6.32	-3.86	-	-	0.0
			11/12/2003	11.40	-6.23	-3.77	-	-	0.0
			12/29/2003	11.25	-6.08	-3.62	-	-	0.0
			3/15/2004	10.81	-5.64	-3.18	-	-	1.2
			6/7/2004	10.97	-5.80	-3.34	-	-	0.4
			9/7/2004	10.98	-5.81	-3.35	-	-	0.0
			12/7/2004	10.06	-4.89	-2.43	-	-	0.0
			12/4/2006	10.64	-5.47	-3.01	-	-	0.0
MW-18	2.93	5.39	8/9/2002	6.22	-3.29	-0.83	-	-	-
			10/7/2002	6.13	-3.20	-0.74	-	-	-
			6/26/2003	5.78	-2.85	-0.39	-	-	0.5
			10/14/2003	6.23	-3.30	-0.84	-	-	0.0
			11/12/2003	6.18	-3.25	-0.79	-	-	0.0
			12/29/2003	5.93	-3.00	-0.54	-	-	0.0
			3/15/2004	5.24	-2.31	0.15	-	-	1.1
			6/7/2004	5.68	-2.75	-0.29	-	-	1.0
			9/7/2004	5.81	-2.88	-0.42	-	-	1.0
			12/7/2004	4.88	-1.95	0.51	-	-	0.0
			12/4/2006	5.38	-2.45	0.01	-	-	0.0

Table 2.11-1
Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
MW-19	2.74	5.20	3/15/2004	5.28	-2.54	-0.08	-	-	0.7
			6/7/2004	5.73	-2.99	-0.53	-	-	10.1
			9/7/2004	5.85	-3.11	-0.65	-	-	0.9
			12/7/2004	4.88	-2.14	0.32	-	-	0.1
			12/4/2006	5.30	-2.56	-0.10	-	-	0.0
MW-20	24.97	27.43	3/15/2004	26.42	-1.45	1.01	-	-	0.8
			6/7/2004	26.62	-1.65	0.81	-	-	0.0
			9/7/2004	27.03	-2.06	0.40	-	-	0.0
			12/7/2004	26.11	-1.14	1.32	-	-	0.0
P-1	24.96	27.42	8/26/2002	28.00	-3.04	-0.58	-	-	-
			9/18/2002	29.60	-4.64	-2.18	29.00	0.60	-
			9/30/2002	29.70	-4.74	-2.28	28.98	0.72	-
			10/7/2002	29.73	-4.77	-2.31	28.91	0.82	-
			6/26/2003	31.32	-6.36	-3.90	28.50	2.82	29.4
			10/15/2003	ND	NA	NA	28.88	NA	51.2
			11/13/2003	ND	NA	NA	28.86	NA	48.6
			12/30/2003	ND	NA	NA	28.53	NA	2.7
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	30.83	-5.87	-3.41	27.33	3.5	96.3
P-2	21.90	24.36	9/18/2002	25.90	-4.00	-1.54	-	-	-
			9/18/2002	25.67	-3.77	-1.31	-	-	-
			9/30/2002	25.81	-3.91	-1.45	-	-	-
			10/7/2002	25.71	-3.81	-1.35	-	-	-
			6/26/2003	26.29	-4.39	-1.93	-	-	0.0
			10/14/2003	25.78	-3.88	-1.42	-	-	0.0
			11/12/2003	25.69	-3.79	-1.33	-	-	0.0
			12/29/2003	25.30	-3.4	-0.94	-	-	0.0
			3/15/2004	24.52	-2.62	-0.16	-	-	0.2
			6/7/2004	24.97	-3.07	-0.61	-	-	0.0
			9/7/2004	25.09	-3.19	-0.73	-	-	0.0
			12/7/2004	24.29	-2.39	0.07	-	-	0.0
P-3	26.60	29.06	8/29/2002	30.90	-4.30	-1.84	-	-	-
			9/18/2002	30.50	-3.90	-1.44	29.80	0.70	-
			9/30/2002	30.52	-3.92	-1.46	29.90	0.62	-
			10/7/2002	30.10	-3.50	-1.04	29.77	0.33	-
			6/26/2003	29.64	-3.04	-0.58	29.46	0.18	68.3
			10/15/2003	ND	NA	NA	29.96	NA	63.1
			11/13/2003	ND	NA	NA	29.95	NA	57.7
			12/30/2003	ND	NA	NA	29.33	NA	23.3
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	28.43	NA	49.9
P-4	25.18	27.64	9/18/2002	28.87	-3.69	-1.23	-	-	-
			9/30/2002	28.93	-3.75	-1.29	-	-	-
			10/7/2002	28.86	-3.68	-1.22	-	-	-
			6/26/2003	28.50	-3.32	-0.86	-	-	0.4
			10/15/2003	28.96	-3.78	-1.32	P	-	18.6
			11/12/2003	28.84	-3.66	-1.20	-	-	13.8
			12/29/2003	28.46	-3.28	-0.82	-	-	14.0
			3/15/2004	27.85	-2.67	-0.21	P	-	17.6
			6/7/2004	28.34	-3.16	-0.70	P	-	32.8
			9/7/2004	ND	-	-	28.34	NM	24.1
			12/7/2004	27.95	-2.77	-0.31	27.67	0.28	47.3

Table 2.11-1
Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
P-5	27.55	30.01	8/29/2002	30.85	-3.30	-0.84	-	-	-
			9/18/2002	30.90	-3.35	-0.89	-	-	-
			9/30/2002	30.86	-3.31	-0.85	30.81	0.05	-
			10/7/2002	31.47	-3.92	-1.46	30.65	0.82	-
			6/26/2003	32.35	-4.80	-2.34	30.46	1.89	16.3
			10/15/2003	ND	NA	NA	30.99	NA	26.1
			11/13/2003	ND	NA	NA	31.02	NA	22.1
			12/30/2003	ND	NA	NA	30.02	NA	15.7
[4]			3/15/2004	NM	-	-	NM	-	
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	29.47	NA	27.5
			12/4/2006	ND	NA	NA	25.95	NA	35.8
P-6	27.16	29.62	9/18/2002	30.30	-3.14	-0.68	-	-	-
			9/30/2002	30.44	-3.28	-0.82	-	-	-
			10/7/2002	30.40	-3.24	-0.78	-	-	-
			6/26/2003	30.17	-3.01	-0.55	30.10	0.07	115.0
			10/15/2003	ND	NA	NA	30.64	NA	88.7
			11/13/2003	ND	NA	NA	30.57	NA	82.6
			12/30/2003	ND	NA	NA	30.05	NA	169.0
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	29.15	-1.99	0.47	28.82	0.33	45.9
			12/4/2006	ND	NA	NA	29.55	NA	184.0
P-8	21.99	24.45	9/18/2002	24.64	-2.65	-0.19	-	-	-
			9/30/2002	24.79	-2.80	-0.34	-	-	-
			10/7/2002	24.65	-2.66	-0.20	-	-	-
			6/26/2003	25.12	-3.13	-0.67	24.56	0.56	150.0
			10/15/2003	26.54	-4.55	-2.09	25.29	1.25	74.1
			11/13/2003	26.44	-4.45	-1.99	25.18	1.26	83.3
			12/30/2003	ND	NA	NA	24.38	NA	52.8
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	26.97	-4.98	-2.52	23.80	3.17	79.5
			12/4/2006	29.04	-7.05	-4.59	24.50	4.54	45.7
P-9	15.81	18.27	8/29/2002	18.70	-2.89	-0.43	-	-	-
			9/18/2002	17.98	-2.17	0.29	-	-	-
			9/6/2002	18.48	-2.67	-0.21	-	-	-
			9/30/2002	18.22	-2.41	0.05	-	-	-
			10/7/2002	18.10	-2.29	0.17	-	-	-
			6/26/2003	18.06	-2.25	0.21	-	-	1.9
			10/14/2003	18.64	-2.83	-0.37	-	-	2.5
			11/12/2003	18.47	-2.66	-0.20	-	-	2.8
			1/6/2004	18.32	-2.51	-0.05	P	-	NM
			3/15/2004	17.35	-1.54	0.92	P	-	8.1
			6/7/2004	ND	NA	NA	17.70	NA	3.6
			9/7/2004	17.77	-1.96	0.50	-	-	3.2
			12/7/2004	17.13	-1.32	1.14	P	-	12.4
			12/4/2006	ND	NA	NA	17.57	NA	8.5

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Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
P-10	5.18	7.64	9/18/2002	8.81	-3.63	-1.17	-	-	-
			9/30/2002	9.00	-3.82	-1.36	-	-	-
			10/7/2002	8.85	-3.67	-1.21	-	-	-
			6/26/2003	8.47	-3.29	-0.83	14.65	0.3 [5]	1.4
			10/15/2003	NM	-	-	NM	-	NM
			11/13/2003	8.67	-3.49	-1.03	-	-	82.7
			12/30/2003	8.16	-2.98	-0.52	P	-	2.7
			3/15/2004	7.57	-2.39	0.07	P	-	18.4
			6/7/2004	ND	NA	NA	7.95	NA	0.7
			9/7/2004	8.10	-2.92	-0.46	P	-	0.0
			12/7/2004	7.11	-1.93	0.53	P	-	1.8
			12/4/2006	7.58	-2.40	0.06	-	-	0.6
GP-1	21.71	24.17	8/19/2002	26.35	-4.64	-2.18	-	-	-
			8/23/2002	26.30	-4.59	-2.13	-	-	-
			9/18/2002	26.06	-4.35	-1.89	-	-	-
			9/30/2002	26.15	-4.44	-1.98	-	-	-
			10/7/2002	26.06	-4.35	-1.89	-	-	-
			6/26/2003	25.86	-4.15	-1.69	-	-	16.5
			10/14/2003	26.36	-4.65	-2.19	-	-	4.7
			11/12/2003	26.26	-4.55	-2.09	-	-	2.8
			12/29/2003	25.97	-4.26	-1.80	-	-	0.0
			3/15/2004	25.40	-3.69	-1.23	-	-	3.8
			6/7/2004	25.62	-3.91	-1.45	-	-	2.1
			9/7/2004	25.61	-3.90	-1.44	-	-	0.0
			12/7/2004	24.96	-3.25	-0.79	-	-	9.2
GP-2	24.03	26.49	8/19/2002	29.50	-5.47	-3.01	28.00	1.5	-
			8/23/2002	30.30	-6.27	-3.81	28.80	1.5	-
			9/18/2002	32.80	-8.77	-6.31	27.60	5.2	-
			9/30/2002	32.83	-8.80	-6.34	26.95	5.88	-
			10/7/2002	32.52	-8.49	-6.03	26.58	5.94	-
			6/27/2003	ND	NA	NA	25.25	NA	63.8
			10/15/2003	ND	NA	NA	25.84	NA	48.8
			11/13/2003	ND	NA	NA	25.48	NA	43.5
			12/30/2003	ND	NA	NA	25.13	NA	39.1
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	24.53	NA	99.4
GP-3	20.01	22.47	8/19/2002	24.15	-4.14	-1.68	-	-	-
			8/23/2002	24.00	-3.99	-1.53	-	-	-
			9/18/2002	22.94	-2.93	-0.47	-	-	-
			9/30/2002	22.91	-2.90	-0.44	-	-	-
			10/7/2002	22.86	-2.85	-0.39	-	-	-
			6/26/2003	22.12	-2.11	0.35	22.04	0.08	23.0
			10/15/2003	ND	NA	NA	22.80	NA	111.0
			11/13/2003	ND	NA	NA	22.76	NA	97.1
			12/30/2003	ND	NA	NA	22.51	NA	202.0
[4]			3/15/2004	NM	-	-	NM	-	NM
[4]			6/7/2004	NM	-	-	NM	-	NM
[4]			9/7/2004	NM	-	-	NM	-	NM
			12/8/2004	ND	NA	NA	21.11	NA	63.2

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GP-4	18.64	21.10	8/19/2002	20.80	-2.16	0.30	-	-	-
			9/18/2002	21.49	-2.85	-0.39	-	-	-
			9/30/2002	21.51	-2.87	-0.41	-	-	-
			10/7/2002	21.41	-2.77	-0.31	-	-	-
			6/26/2003	21.37	-2.73	-0.27	-	-	13.2
			10/14/2003	21.93	-3.29	-0.83	-	-	14.0
			11/12/2003	21.83	-3.19	-0.73	-	-	9.6
			12/29/2003	21.37	-2.73	-0.27	-	-	3.6
			3/15/2004	20.81	-2.17	0.29	-	-	4.7
			6/7/2004	20.98	-2.34	0.12	-	-	0.0
			9/7/2004	21.13	-2.49	-0.03	-	-	10.9
			12/7/2004	20.48	-1.84	0.62	-	-	0.0
GP-12	16.23	18.69	8/23/2002	20.63	-4.40	-1.94	-	-	-
			8/29/2002	20.70	-4.47	-2.01	-	-	-
			9/6/2002	19.85	-3.62	-1.16	-	-	-
			9/18/2002	19.62	-3.39	-0.93	-	-	-
			9/30/2002	19.78	-3.55	-1.09	-	-	-
			10/7/2002	19.69	-3.46	-1.00	-	-	-
			6/26/2003	19.38	-3.15	-0.69	-	-	0.5
			10/14/2003	19.90	-3.67	-1.21	-	-	1.9
			11/12/2003	19.74	-3.51	-1.05	-	-	5.9
			12/29/2003	19.34	-3.11	-0.65	-	-	5.1
			3/15/2004	18.76	-2.53	-0.07	-	-	0.9
			6/7/2004	17.23	(?)	(?)	-	-	0.0
[6]	16.69	19.15	9/7/2004	19.46	-2.77	-0.31	-	-	9.5
			12/7/2004	18.56	-1.87	0.59	-	-	2.6
			12/4/2006	18.70	-2.01	0.45	-	-	2.0
GP-21	16.30	18.76	9/18/2002	18.62	-2.32	0.14	-	-	-
			9/30/2002	18.77	-2.47	-0.01	-	-	-
			10/7/2002	18.60	-2.30	0.16	-	-	-
			6/26/2003	18.78	-2.48	-0.02	-	-	0.2
			10/14/2003	19.41	-3.11	-0.65	-	-	0.0
			11/12/2003	19.22	-2.92	-0.46	-	-	0.0
			12/29/2003	18.72	-2.42	0.04	-	-	0.0
			3/15/2004	18.11	-1.81	0.65	-	-	0.7
			6/7/2004	18.39	-2.09	0.37	-	-	0.0
			9/7/2004	18.50	-2.20	0.26	-	-	0.0
			12/7/2004	17.89	-1.59	0.87	-	-	0.0
			12/4/2006	18.30	-2.00	0.46	-	-	0.0
GP-22	15.85	18.31	9/18/2002	18.84	-2.99	-0.53	-	-	-
			9/30/2002	19.03	-3.18	-0.72	-	-	-
			10/7/2002	18.95	-3.10	-0.64	-	-	-
			6/26/2003	18.77	-2.92	-0.46	-	-	13.0
			10/14/2003	19.32	-3.47	-1.01	-	-	8.4
			11/12/2003	19.13	-3.28	-0.82	-	-	8.7
			12/29/2003	18.61	-2.76	-0.30	-	-	3.6
			3/15/2004	17.99	-2.14	0.32	-	-	9.6
			6/7/2004	18.43	-2.58	-0.12	-	-	10.2
			9/7/2004	18.50	-2.65	-0.19	-	-	14.7
			12/7/2004	17.70	-1.85	0.61	-	-	0.0
			12/4/2006	18.16	-2.31	0.15	-	-	12.3

Table 2.11-1
Well Gauging Data
Semi-Perched Aquifer Monitoring Points: June 2002 - December 2006
Ascon Landfill Site

Groundwater Monitoring Well Number	Well Head Elevation-- Feet Above Mean Sea Level (ft MSL)[1]	Well Head Elevation-- Feet Above NAVD88 Datum	Date of Gauging Event	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)	Groundwater Elevation (ft above NAVD88)	Depth to Top of Product (ft below TOC)	Product Thickness (ft)	PID Reading (ppm)
GP-23	24.88	27.34	9/18/2002	28.07	-3.19	-0.73	-	-	-
			9/30/2002	28.32	-3.44	-0.98	-	-	-
			10/7/2002	28.15	-3.27	-0.81	-	-	-
			6/26/2003	27.87	-2.99	-0.53	-	-	1.2
			10/14/2003	28.36	-3.48	-1.02	-	-	17.0
			11/12/2003	28.24	-3.36	-0.90	-	-	13.9
			12/29/2003	27.96	-3.08	-0.62	-	-	15.6
			3/15/2004	27.42	-2.54	-0.08	-	-	28.3
			6/7/2004	27.79	-2.91	-0.45	-	-	10.3
			9/7/2004	27.99	-3.11	-0.65	-	-	2.5
			12/7/2004	27.09	-2.21	0.25	-	-	0.4
			12/4/2006	27.57	-2.69	-0.23	-	-	24.3
GP-24	26.32	28.78	9/18/2002	29.90	-3.58	-1.12	-	-	-
			9/30/2002	30.01	-3.69	-1.23	-	-	-
			10/7/2002	29.95	-3.63	-1.17	-	-	-
[7]	24.13	26.59	6/27/2003	27.15	-3.02	-0.56	-	-	8.8
			10/14/2003	27.65	-3.52	-1.06	-	-	8.4
			11/12/2003	27.51	-3.38	-0.92	-	-	0.5
			12/29/2003	27.15	-3.02	-0.56	-	-	5.3
[6]	27.49	29.95	3/15/2004	29.92	-2.43	0.03	-	-	19.3
			6/7/2004	30.42	-2.93	-0.47	-	-	33.2
			9/7/2004	30.26	-2.77	-0.31	-	-	17.4
			12/7/2004	29.51	-2.02	0.44	-	-	12.3
GP-25	19.89	22.35	9/18/2002	23.43	-3.54	-1.08	-	-	-
			9/30/2002	23.55	-3.66	-1.20	-	-	-
			10/7/2002	23.40	-3.51	-1.05	-	-	-
			6/26/2003	23.31	-3.42	-0.96	-	-	0.0
			10/14/2003	23.85	-3.96	-1.50	-	-	0.0
			11/12/2003	23.72	-3.83	-1.37	-	-	0.0
			12/29/2003	23.33	-3.44	-0.98	-	-	0.0
			3/15/2004	23.79	-3.90	-1.44	-	-	0.4
			6/7/2004	22.96	-3.07	-0.61	-	-	0.3
			9/7/2004	23.04	-3.15	-0.69	-	-	0.0
			12/7/2004	ND	NA	NA	22	NA	325.0

Explanation:

ft	Feet.
TOC	Top of Casing.
MSL	Mean Sea Level Based on Newport Bay Entrance Tidal Station.
-	Not able to detect with interface probe.
P	Only water detected with interface probe, however, product visually observed on interface probe after withddrawal from monitoring location. Data judged usable for contouring.
NM	Not Measured.
NA	Not applicable or unable to calculate.
ND	Not Detected. Only product detected by interface probe.
?	GP-12 well casings damaged at surface.

Footnotes:

[1]	Surveying data based on NAVD88 datum with 2.46 foot conversion to derive MSL.
[2]	Well AW-1 was located in April, 2004
[3]	4.5 feet of product was observed in well B-2 on September 22, 1988.
[4]	Monitoring location not monitored due to previous detections of product
[5]	Bottom of product in P-10 located at 14.95 feet below TOC.
[6]	Well casing resurveyed on September 17, 2004, after well casing was repaired.
[7]	Well casing resurveyed on Febuary 3, 2004, after well casing was damaged .

Notes

Wells AW-6 and AW-7 have been reported as being paved over during expansion of Hamilton roadway.

Source: Groundwater Remedial Investigation Report, Revision 1, Geosyntec Consultants, 2007 (Geosyntec, 2007b).

Table 3.2-1

Hydrocarbon Distribution -- Pilot Study No. 3 Lagoon Samples

Ascon Landfill Site

	Lagoon 1		Lagoon 2		Lagoon 3		Lagoon 5
	PNL-L1A	**PNL-L1B**	**PNL-L2A**	**PNL-L2B**	**PNL-L3A**	**PNL-L3B**	**PNL-L5B**
Carbon Range	%	%	%	%	%	%	%
C8-C40	100	100	100	100	100	100	100
C8-C9	--	--	--	--	--	--	--
C10-C11	--	--	--	--	--	5	5
C12-C13	9	4	8	6	4	10	10
C14-C15	12	7	11	10	6	12	11
C16-C17	13	14	13	15	10	13	12
C18-C19	12	17	14	14	14	13	12
C20-C21	10	11	12	9	12	9	9
C22-C23	8	11	9	10	12	9	9
C24-C25	6	8	--	6	9	8	7
C26-C27	7	9	8	10	9	6	7
C28-C29	6	7	--	7	10	7	8
C30-C31	7	7	--	7	8	5	6
C32-C35	4	5	--	4	--	2	--
C36-C40	--	--	--	--	--	--	--
Sum of Ranges	94	100	75	98	94	99	96

Notes:

Hydrocarbon Distribution is reported as percentage of C8-C40 result.

"--" indicates intermediate ranges with hydrocarbon concentrations not detected above the reporting limit (non-detect).

"Sum of Ranges" indicates sum of detected intermediate ranges. Intermediate ranges with hydrocarbon that contributes to the C8-C40 result but with non-detect at the intermediate range can cause sum to be below 100 percent.

Table 3.2-2
Physical Analysis Results From 1996 ESE Investigation
Ascon Landfill Site

Sample No.	Depth (ft.)	Water, Sediment, Oil (Volume %) [1]	Specific Gravity	Heating Value (BTU/lb)	Viscosity [2]	Median Grain Size (mm) & I.D.
L1-1-04'	4	Water - 6.0 Sediment - 94.0 Oil - <0.05	1.1889	1,791	NA	-
L1-1-07'	7	Water - <0.05 Sediment - 100.0 Oil - <0.05	-	-	-	0.048 (Silt)
L1-2-05'	5	Water - 1.0 Sediment - 99.0 Oil - <0.05	1.3084	<175	NA	-
L1-2-10'	10	Water - <0.05 Sediment - 100.0 Oil - <0.05	-	-	-	0.022 (Silt)
L2-1-04'	4	Water - 6.0 Sediment - 44.0 Oil - 50.0	1.0844	10,740	NA	-
L2-1-9-10'	10	Water - 2.0 Sediment - 98.0 Oil - <0.05	-	-	-	0.015 (Silt)
L2-2-04'	4	Water - 10.0 Sediment - 90.0 Oil - <0.05	1.3216	<175	NA	-
L2-2-12'	12	Water - 4.0 Sediment - 96.0 Oil - <0.05	-	-	-	0.029 (Silt)
L3-1-05'	5	Water - 4.0 Sediment - 96.0 Oil - <0.05	1.2662	175	NA	-
L3-1-15'	15	Water - 1.0 Sediment - 99.0 Oil - <0.05	-	-	-	0.020 (Silt)
L3-2-05'	5	Water - 4.0 Sediment - 96.0 Oil - <0.05	1.1937	<175	NA	-
L3-2-15'	15	Water - 1.0 Sediment - 99.0 Oil - <0.05	-	-	-	0.013 (Silt)
L4-1-04'	4	Water - 2.0 Sediment - 98.0 Oil - <0.05	1.467	<175	NA	-
L4-2-12'	12	Water - <0.05 Sediment - 100.0 Oil - <0.05	-	-	-	0.012 (Silt)
L5-1-05'	5	Water - 2.0 Sediment - 98.0 Oil - <0.05	1.339	<175	NA	-
L5-1-12'	12	Water - <0.05 Sediment - 100.0 Oil - <0.05	-	-	-	0.011 (Silt)
L5-2-05'	5	Water - <0.05 Sediment - 100.0 Oil - <0.05	1.6127	<175	NA	-
L5-2-12'	12	Water - <0.05 Sediment - 100.0 Oil - <0.05	-	-	-	0.015 (Silt)

Table 3.2-2
Physical Analysis Results From 1996 ESE Investigation
Ascon Landfill Site

Notes:

ft	feet
BTU	British Thermal Unit
lb	pound
-	not analyzed
mm	millimeter
I.D.	identification
NA	viscosity could not be determined

[1] Viscosity analysis attempted at 100 ^{o}F, 122^{o}F and 210^{o}F, due to amount of solid material in samples

[2] According to ASTM D.96 (centrifuge segregation)

Table 3.2-3a
Physical Properties Summary
Dry Bulk Density and Particle Size
Ascon Landfill Site

			ASTM D 2216/ASTM D 2937			PARTICLE SIZE DATA, % PASSING/RETAINED 200 MESH				
Sample ID.	Depth	Lithology	Moisture Content	Volumetric Water Content	Dry Bulk Density	Solids Dry Weight	Sample Weight Retained on 200 Mesh		Sample Weight Passing 200 Mesh	
	ft.		% wt	fraction (Vb)	g/cc	grams	grams	percent	grams	percent
PNL-21-33-34	33-34	native sand	22.1	0.349	1.58	83.5	75.30	90.2	8.20	9.8
PNL-21-36-37	36-37	native sand	26.2	0.403	1.54	139.75	131.60	94.2	8.15	5.8
PNL-21-45-46	45-46	native sand	25.8	0.379	1.47	189.85	158.80	83.6	31.05	16.4
PNL-21-51-52	51-52	native sand	23.5	0.351	1.49	224.94	212.30	94.4	12.64	5.6
PNL-23-26-27	26-27	native clay	51.6	0.589	1.14	232.36	0.90	0.4	231.46	99.6
PNL-23-32-33	32-33	native sand	24.7	0.364	1.47	239.40	226.10	94.4	13.30	5.6
PNL-23-50-51	50-51	native sand	24.3	0.378	1.56	263.21	250.60	95.2	12.61	4.8
PNL-23-56-57	56-57	native sand	26.8	0.393	1.46	249.02	242.50	97.4	6.52	2.6
PNL-28-23-24.5	23-24.5	native sand	25.0	0.356	1.42	240.73	230.00	95.5	10.73	4.5
PNL-28-38-39.5	38-39.5	native sand	26.2	0.381	1.45	202.95	174.30	85.9	28.65	14.1
PNL-28-53-54.5	53-54.5	native sand	30.5	0.395	1.30	229	215.60	94.1	13.40	5.9
PNL-28-60-60.5	60-60.5	native sand	26.1	0.391	1.50	220.02	128.50	58.4	91.52	41.6
PNL-5A (L5A)	N/A	drilling mud	160.8	0.747	0.46	--	--	--	--	--
PNL-4B (L4B)	N/A	drilling mud	94.8	0.610	0.64	--	--	--	--	--

-- = not analyzed

Table 3.2-3b
Physical Properties Summary
Hydraulic Conductivity and Atterberg Limits
Ascon Landfill Site

			5.0 PSI CONFINING STRESS (ASTM D5084)			ATTERBERG LIMITS (ASTM D4318)			FINE FRACTION	ASTM D 2216
Sample ID.	Depth (ft.)	Lithology	Sample Orient.	Native State Effective Permeability to Water [1,2] (millidarcy)	Native State Effective Hydraulic Conductivity [1,2] (cm/s)	Liquid Limit	Plastic Limit	Plasticity Index	USCS Classification (Fines: <#40 Sieve)	Moisture Content % dry weight
PNL-21 22-24	23.5	drilling mud	vertical	0.134	1.35E-07	76.1	22.8	53.3	CH	42.18
PNL-21-24-26	24.9	native clay	vertical	0.528	5.27E-07	66	30.1	35.9	CH	--
PNL-23 16.5-19	18.5	drilling mud	vertical	0.866	8.79E-07	57	24.4	32.6	CH	77.98
PNL-23-23.5-26	25.7	native clay	vertical	0.426	4.30E-07	72.1	30.1	42	CH	--
PNL-28 11-13	12.5	drilling mud	vertical	0.349	3.51E-07	75.2	22.7	52.5	CH	--
PNL-28-15-17	16	drilling mud/ native clay	--	--	--	75.8	25.7	50.1	CH	--

[1] Native State = As received with pore fluids in place
[2] Permeability to water and conductivity measured at saturated conditions
-- = not analyzed

Table 3.2-4
Summary Statistics for Detected Compounds in Lagoons 1, 2, and 3 Tarry Liquids
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	0.4	24	1	0.53	2.7	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	29.5	26	20	38.6	**100**	METAL	500	50		3.9E-01	1.6E+00
BARIUM	753	26	26	**1122**	***5000***	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.1	24	8	0.15	0.4	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	7.2	28	25	**11.8**	***78.0***	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	88.3	28	28	***109***	***300***	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	4.0	16	16	4.52	6.5	METAL	8000	800		9.0E+02	1.9E+03
COPPER	35.9	25	25	42.0	97.0	METAL	2500	250		3.1E+03	4.1E+04
LEAD	***361***	28	28	***491***	***1800***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.4	23	20	0.50	1.6	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	2.9	16	15	3.61	6.0	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	50.3	26	26	60.4	130	METAL	2000	200		1.6E+03	2.0E+04
ORGANIC LEAD	2.3	6	6	3.42	5.2	METAL					
SELENIUM	0.3	26	1	0.29	0.2	METAL	100	10	20	3.9E+02	5.1E+03
SILVER	0.1	26	1	0.16	0.8	METAL	500	50	100	3.9E+02	5.1E+03
VANADIUM	31.7	18	16	37.2	51.0	METAL	2400	240		7.8E+01	1.0E+03
ZINC	413	26	26	537.6	1600	METAL	5000	2500		2.3E+04	1.0E+05
PCB	1.6	76	22	2.13	13.0	PCB	50	50		2.2E-01	7.4E-01
PCB-1254	1.9	6	6	3.03	5.0	PCB				2.2E-01	7.4E-01
4,4´-DDT	0.1	4	2		0.2	PESTICIDE				1.7E+00	7.0E+00
1-PROPENYLBENZENE	4.4	1	1		4.4	SVOC					
2-METHYLNAPHTHALENE	24.5	13	5	33.7	75.0	SVOC					
CHRYSENE	14.2	13	1	16.9	30.0	SVOC				6.2E+01	2.1E+02
FLUORENE	15.8	13	1	18.9	8.9	SVOC				2.7E+03	2.6E+04
NAPHTHALENE	14.1	24	13	17.6	32.0	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	15.9	13	2	19.1	25.0	SVOC					
PYRENE	13.0	13	1	15.6	9.0	SVOC				2.3E+03	2.9E+04
DIESEL/OIL RANGE ORGANICS	52833	6	6	63420	78000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	40790	10	10	53549	81000	TPH					
GASOLINE RANGE ORGANICS	792	6	1	2045	4600	TPH					
OIL & GREASE	118000	6	6	140149.6	170000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	155679	14	14	235069	500000	TPH					
(1-PROPENYL)CYCLOHEXANE	12.0	1	1		12.0	VOC					
1,1,1-TRICHLOROETHANE	13.2	21	5	31.9	240.0	VOC				1.2E+03	1.2E+03
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.3	2	2		7.9	VOC					
1,1-DICHLOROETHANE	0.1	17	1	0.13	0.7	VOC				5.1E+02	1.7E+03
1,1-DICHLOROETHENE	0.5	17	1	1.40	8.9	VOC				1.2E+02	4.1E+02
1,2,3,4-TETRAHYDRONAPHTHALENE	12.0	1	1		12.0	VOC					
1,2,3,5-TETRAMETHYLBENZENE	4.1	1	1		4.1	VOC					
1,2,4-TRIMETHYLBENZENE	2.7	6	6	4.90	9.4	VOC				5.2E+01	1.7E+02
1,2-DICHLOROETHANE	3.9	21	5	8.26	***55.0***	VOC			10	2.8E-01	6.0E-01
1,2-DICHLOROETHENE (TOTAL)	1.2	4	1		1.2	VOC					
1,3,5-TRIMETHYLBENZENE	0.8	6	6	1.85	3.9	VOC				2.1E+01	7.0E+01
1,4-DIETHYLBENZENE	2.5	1	1		2.5	VOC					
1,4-DIMETHYLCYCLOOCTANE	14.0	1	1		14.0	VOC					
1-ETHENYL-3-ETHYLBENZENE	21.0	1	1		21.0	VOC					

Table 3.2-4
Summary Statistics for Detected Compounds in Lagoons 1, 2, and 3 Tarry Liquids
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
2-CYCLOHEXYLDECANE	5.2	4	4		8.1	VOC					
2-ETHYLHEXANOL	3.2	1	1		3.2	VOC					
2-METHYLDECAHYDRONAPHTHALENE	14.0	1	1		14.0	VOC					
6-METHYLHEPTANOL	12.3	4	4		18.0	VOC					
BENZENE	2.1	21	15	3.40	***17.0***	VOC			10	6.4E-01	1.4E+00
BROMOFORM	0.9	17	1	2.35	15.0	VOC				6.2E+01	2.2E+02
CHLOROFORM	4.4	21	5	7.40	24.0	VOC			120	2.2E-01	4.7E-01
DECAHYDRONAPHTHALENE	5.4	1	1		5.4	VOC					
DIETHYLMETHYLBENZENE ISOMERS	5.7	1	1		5.7	VOC					
ETHYLBENZENE	2.9	21	17	4.56	20.0	VOC				4.0E+02	4.0E+02
ISOOCTANOL	9.2	2	2		9.4	VOC					
ISOPROPYLBENZENE	0.8	6	6	1.14	1.5	VOC				5.7E+02	2.0E+03
M,P-XYLENE	1.5	11	11	2.63	8.4	VOC					
METHYLENE CHLORIDE	7.2	21	5	15.7	110	VOC				9.1E+00	2.1E+01
METHYLINDANE ISOMERS	17.0	1	1		17.0	VOC					
M-XYLENE	0.2	3	1		0.6	VOC					
n-PROPYLBENZENE	1.5	6	6	2.06	2.7	VOC				2.4E+02	2.4E+02
OCTAHYDROINDENE	19.0	4	4		31.0	VOC					
O-XYLENE	0.8	14	11	1.37	4.8	VOC					
p-ISOPROPYLTOLUENE	0.6	6	6	0.88	1.4	VOC					
sec-BUTYLBENZENE	0.6	6	5	0.87	1.2	VOC				2.2E+02	2.2E+02
TOLUENE	0.9	20	15	1.45	5.0	VOC				5.2E+02	5.2E+02
TRIMETHYLBENZENE ISOMERS	29.7	10	10	42.5	71.0	VOC					
XYLENES (TOTAL)	2.9	7	4	5.78	13.0	VOC				2.7E+02	4.2E+02

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 6 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-5

Summary Statistics for Detected Compounds in Lagoons 4 and 5 Highly-Liquid Drilling Muds

Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	0.26	21	3	0.27	0.40	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	20.4	23	18	29.2	100	METAL	500	50		3.9E-01	1.6E+00
BARIUM	473	23	22	692	***2600***	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.21	21	9	0.31	0.85	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	2.6	24	15	4.28	***23.0***	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	67.9	24	23	**85.3**	***190***	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	3.3	12	10	4.20	5.7	METAL	8000	800		9.0E+02	1.9E+03
COPPER	28.5	22	21	35.8	92.0	METAL	2500	250		3.1E+03	4.1E+04
LEAD	251	24	19	***371***	***1200***	METAL	1000	50	100	4.0E+03	8.0E+02
MERCURY	0.16	21	13	0.22	0.60	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	1.6	12	21	2.55	6.3	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	27.0	22	21	32.9	77.0	METAL	2000	200		1.6E+03	2.0E+04
ORGANIC LEAD	1.1	4	4		3.7	METAL					
SELENIUM	0.50	23	6	0.71	3.1	METAL	100	10	20	3.9E+02	5.1E+03
SILVER	0.42	23	2	0.95	7.6	METAL	500	50	100	3.9E+02	5.1E+03
VANADIUM	26.7	17	15	33.4	50.0	METAL	2400	240		7.8E+01	1.0E+03
ZINC	144	22	21	184	460	METAL	5000	2500		2.3E+04	1.0E+05
PCB	0.22	62	4	0.42	6.1	PCB	50	50		2.2E-01	7.4E-01
PCB-1016	0.88	4	1		3.5	PCB				3.9E+00	2.1E+01
PCB-1254	0.07	4	2		0.22	PCB				2.2E-01	7.4E-01
PCB-1260	0.02	4	1		0.04	PCB				2.2E-01	7.4E-01
4,4´-DDT	0.05	4	1		0.21	PESTICIDE				1.7E+00	7.0E+00
2-METHYLNAPHTHALENE	11.2	12	7	17.7	41.0	SVOC					
ANTHRACENE	3.2	12	1	3.73	3.2	SVOC				2.2E+04	1.0E+05
BENZIDINE	34.1	11	1	72.0	260	SVOC				2.1E-03	7.5E-03
BIS(2-ETHYLHEXYL) PHTHALATE	45.2	12	1	107.4	460	SVOC				3.5E+01	1.2E+02
CHRYSENE	4.6	11	1	7.88	0.67	SVOC				6.2E+01	2.1E+02
FLUORANTHENE	3.3	11	1	4.05	0.63	SVOC				2.3E+03	2.2E+04
NAPHTHALENE	5.1	22	12	6.22	14.0	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	6.0	13	4	8.34	17.0	SVOC					
PYRENE	5.8	12	2	7.98	15.0	SVOC				2.3E+03	2.9E+04
DIESEL/OIL RANGE ORGANICS	27250	4	4		38000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	18167	9	9	25875	44000	TPH					
GASOLINE RANGE ORGANICS	2425	4	2		5200	TPH					
OIL & GREASE	36997	8	8	60914	110000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	112682	11	11	207300	530000	TPH					
(1,1-DIMETHYLBUTYL)BENZENE	3.3	1	1		3.3	VOC					
(1,1-DIMETHYLPROPYL)BENZENE	8.3	1	1		8.3	VOC					
(1-METHYLBUTYL)BENZENE	6.1	1	1		6.1	VOC					
(1-PROPENYL)CYCLOHEXANE	40	1	1		40	VOC					
1-(1-METHYLETHENYL)-2-(1-METHYLETHYL)BENZENE	7.7	1	1		7.7	VOC					
1-(1-METHYLETHENYL)-4-PROPYLBENZENE	3.4	1	1		3.4	VOC					
1,1,1-TRICHLOROETHANE	0.02	12	1	0.05	0.20	VOC				1.2E+03	1.2E+03

Table 3.2-5
Summary Statistics for Detected Compounds in Lagoons 4 and 5 Highly-Liquid Drilling Muds
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8.6	1	1		8.6	VOC					
1,1,4-6-TETRAMETHYLINDANE	2.0	1	1		2.0	VOC					
1,2,3,5-TETRAMETHYLBENZENE	7.5	1	1		7.5	VOC					
1,2,4,5,-TETRAMETHYLBENZENE	13.0	1	1		13.0	VOC					
1,2,4-Trimethylbenzene	14.5	5	4	34.9	64.0	VOC				5.6E+00	1.7E+02
1,2-DICHLOROETHANE	0.84	12	1	2.21	**10.0**	VOC			10	2.8E-01	6.0E-01
1,3,5-Trimethylbenzene	0.69	4	3	1.22	1.6	VOC				2.1E+01	7.0E+01
1-ETHYL-3,4-DIMETHYLBENZENE	8.7	2	2		10.0	VOC					
1-ETHYL-3-METHYLCYCLOPENTANE	1.6	1	1		1.6	VOC					
1-ETHYL-4-(1-METHYLETHYL)BENZENE	2.7	1	1		2.7	VOC					
1-METHYLETHYLBENZENE	0.65	1	1		0.7	VOC					
1-METHYLETHYLCYCLOPENTANE	4.2	1	1		4.2	VOC					
2,3-DIMETHYLBUTANONE	0.22	1	1		0.22	VOC					
2,4,6-TRICHLOROPHENOL	3.5	12	1	4.32	0.16	VOC			40	6.9E+00	2.5E+01
2,4-DICHLOROPHENOL	3.5	12	1	4.32	0.59	VOC				1.8E+02	1.8E+03
2-BUTANONE	0.02	6	1	0.05	0.11	VOC					
2-CYCLOHEXYLDECANE	3.3	1	1		3.3	VOC					
2-METHYLDECAHYDRONAPHTHALENE	16.0	1	1		16.0	VOC					
2-PROPANONE	0.21	1	1		0.21	VOC					
2-PROPYL-1-HEPTANOL	9.5	2	1		19.0	VOC					
4-(2-BUTENYL)-1,2-DIMETHYLBENZENE	1.8	1	1		1.8	VOC					
6-ETHYL-1,2,3,4-TETRAHYDRONAPHTHALENE	4.1	1	1		4.1	VOC					
6-METHYL-1,1-HEPTANOL	10.0	1	1		10.0	VOC					
6-METHYLHEPTANOL	25.5	2	2		30.0	VOC					
BENZENE	0.27	15	9	0.44	1.6	VOC			10	6.4E-01	1.4E+00
BROMOFORM	0.40	12	1	1.04	4.7	VOC				6.2E+01	2.2E+02
CHLOROFORM	2.7	13	2	5.96	25.0	VOC			120	2.2E-01	4.7E-01
DECAHYDRONAPHTHALENE	15.0	1	1		15.0	VOC					
DIETHYLMETHYLBENZENE ISOMERS	37.0	1	1		37.0	VOC					
DIMETHYLINDANE ISOMERS	25.0	1	1		25.0	VOC					
DIMETHYLNAPHTHALENE	300	1	1		300	VOC					
ETHYLBENZENE	3.1	16	13	4.46	10.0	VOC				4.0E+02	4.0E+02
ETHYLDIMETHYLBENZENE ISOMERS	27.0	1	1		27.0	VOC					
ETHYLDIMETHYLNAPHTHALENE ISOMERS	25.0	1	1		25.0	VOC					
ETHYLMETHYLBENZENE ISOMERS	18.7	2	2		32.0	VOC					
HEXANEDIOIC ACID, DIOCTYL ESTER	700	1	1		700	VOC					
ISOOCTANOL	11.0	1	1		11.0	VOC					
ISOPROPYLBENZNE	1.6	4	4		3.4	VOC				5.7E+02	2.0E+03
M,P-XYLENE	1.9	9	8	2.52	4.5	VOC					
METHYLDECAHYDRONAPHTHALENE ISOMERS	25.0	1	1		25.0	VOC					
METHYLENE CHLORIDE	3.3	13	2	7.59	34.0	VOC				9.1E+00	2.1E+01
METHYLNAPHTHALENE ISOMERS	111	2	2		210	VOC					
METHYLPROPYLBENZENE ISOMERS	12.0	1	1		12.0	VOC					
M-XYLENE	0.83	2	2		1.0	VOC					
n-BUTYLBENZENE	0.32	4	2		0.70	VOC					
n-PROPYLBENZENE	1.7	4	4		2.2	VOC				2.4E+02	2.4E+02
OCTAHYDROINDENE	17.8	4	4		29.0	VOC					
O-XYLENE	1.4	11	9	2.08	3.4	VOC					

Table 3.2-5
Summary Statistics for Detected Compounds in Lagoons 4 and 5 Highly-Liquid Drilling Muds
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
p-ISOPROPYLTOLUENE	0.52	4	3		1.0	VOC					
PROPYLBENZENE	1.2	2	2		1.2	VOC					
P-XYLENE	0.20	2	1		0.4	VOC					
sec-BUTYLBENZENE	0.65	4	4		0.86	VOC				2.2E+02	2.2E+02
TOLUENE	0.37	17	8	0.61	2.0	VOC				5.2E+02	5.2E+02
TRIMETHYLBENZENE ISOMERS	42.8	5	5	78.9	130	VOC					
TRIMETHYLINDANE ISOMERS	6.7	1	1		6.7	VOC					
TRIMETHYLPENTANE ISOMERS	32.0	1	1		32.0	VOC					
XYLENES (TOTAL)	1.1	5	1	3.02	5.7	VOC				2.7E+02	4.2E+02

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-6
Summary Statistics for Detected Compounds in Highly-Liquid Drilling Muds (Non-Pit and Non-Lagoon Areas)
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	1.91	3	1		5.2	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	0.96	4	1		3.1	METAL	500	50		3.9E-01	1.6E+00
BARIUM	242	4	4		670	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.18	3	1		0.47	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.10	4	1		0.32	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	23.0	4	4		27	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	7.63	3	3		9.5	METAL	8000	800		9.0E+02	1.9E+03
COPPER	29.0	3	3		36	METAL	2500	250		3.1E+03	4.1E+04
LEAD	12.0	4	4		22	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.011	3	1		0.028	METAL	20	2	4	2.3E+01	3.1E+02
NICKEL	24.3	3	3		29	METAL	2000	200		1.6E+03	2.0E+04
VANADIUM	36.0	3	3		46	METAL	2400	240		7.8E+01	1.0E+03
ZINC	111	3	3		170	METAL	5000	2500		2.3E+04	1.0E+05
1,2-DICHLOROBENZENE	0.0053	31	1	0.013	0.15	SVOC				6.0E+02	6.0E+02
2,4-DIMETHYLPHENOL	2.88	14	1	7.45	39	SVOC				1.2E+03	1.2E+04
2-METHYLNAPHTHALENE	11.4	14	10	17.4	46	SVOC					
ACENAPHTHENE	0.14	15	1	0.20	0.64	SVOC				3.7E+03	2.9E+04
BIS(2-ETHYLHEXYL) PHTHALATE	0.23	14	1	0.40	1.6	SVOC				3.5E+01	1.2E+02
CHRYSENE	0.13	14	1	0.20	0.74	SVOC				6.2E+01	2.1E+02
DIBENZOFURAN	0.13	14	1	0.18	0.54	SVOC				1.5E+02	1.6E+03
DI-N-BUTYL PHTHALATE	0.23	28	10	0.44	3.7	SVOC					
FLUORENE	0.15	14	1	0.26	0.98	SVOC				2.7E+03	2.6E+04
NAPHTHALENE	6.73	29	20	11.2	67	SVOC				5.6E+01	1.9E+02
N-NITROSODIPHENYLAMINE	0.14	14	1	0.21	0.68	SVOC				9.9E+01	3.5E+02
PHENANTHRENE	2.35	14	3	5.49	27	SVOC					
DIESEL/OIL RANGE ORGANICS	3982	10	8	7487	22000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	9103	8	7	12612	18000	TPH					
VOLATILE FUEL HYDROCARBONS	570	9	9	898	1400	TPH					
1,2,4-TRIMETHYLBENZENE	7.04	15	13	10.2	29	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	2.04	15	14	3.10	9.6	VOC				2.1E+01	7.0E+01
2-BUTANONE	1.31	4	2		5.2	VOC					
ACETONE	0.025	4	1		0.1	VOC				1.4E+04	5.4E+04
BENZENE	0.55	20	15	0.79	2.5	VOC			10	6.4E-01	1.4E+00
CHLOROBENZENE	0.34	20	1	0.88	6.6	VOC			2000	1.5E+02	5.3E+02
ETHYLBENZENE	2.71	20	18	3.56	7.7	VOC				4.0E+02	4.0E+02
ISOPROPYLBENZENE	1.49	15	15	1.98	4.2	VOC				5.7E+02	2.0E+03
M,P-XYLENES	4.75	15	13	7.27	21	VOC					
M-XYLENE	27.0	1	1		27	VOC					
N-BUTYLBENZENE	0.69	15	7	1.05	2.4	VOC				2.4E+02	2.4E+02
N-PROPYLBENZENE	2.36	15	15	3.16	7.2	VOC				2.4E+02	2.4E+02
O-XYLENE	3.12	16	15	4.85	13	VOC					
P-ISOPROPYLTOLUENE	1.54	15	13	2.14	5.6	VOC					
SEC-BUTYLBENZENE	1.01	15	14	1.41	3.6	VOC				2.2E+02	2.2E+02
STYRENE	0.11	19	1	0.28	2	VOC				1.7E+03	1.7E+03
TOLUENE	1.23	20	12	2.14	9.9	VOC				5.2E+02	5.2E+02
XYLENES (TOTAL)	4.05	4	2		9.9	VOC				2.7E+02	4.2E+02

Table 3.2-6
Summary Statistics for Detected Compounds in Highly-Liquid Drilling Muds (Non-Pit and Non-Lagoon Areas)
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-7
Summary Statistics for Detected Compounds in Drilling Muds (Non-Pit and Non-Lagoon Areas)
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	2.46	14	6	3.70	7.5	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	13.6	14	7	29.7	**140**	METAL	500	50		3.9E-01	1.6E+00
BARIUM	575	14	14	883	***2300***	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.23	13	6	0.35	0.74	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.68	14	7	1.20	4.4	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	24.7	14	14	29.8	**56**	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	7.04	13	13	8.37	11	METAL	8000	800		9.0E+02	1.9E+03
COPPER	33.1	13	13	39.3	68	METAL	2500	250		3.1E+03	4.1E+04
LEAD	67.4	14	12	***115***	***320***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.080	8	4	0.15	0.32	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	0.42	13	4	0.72	2.3	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	21.4	13	13	26.5	50	METAL	2000	200		1.6E+03	2.0E+04
ORGANIC LEAD	2.35	2	1		4.7	METAL					
THALLIUM	5.72	13	1	14.8	72	METAL	700	70		5.2E+00	6.7E+01
VANADIUM	31.1	13	13	35.4	56	METAL	2400	240		7.8E+01	1.0E+03
ZINC	165	13	13	238	660	METAL	5000	2500		2.3E+04	1.0E+05
4,4'-DDD	0.0011	13	1	0.0024	0.011	PESTICIDE	1	1		1.7E+00	7.0E+00
4,4'-DDE	0.0016	13	1	0.0037	0.017	PESTICIDE	1	1		1.7E+00	7.0E+00
1,2-DICHLOROBENZENE	0.015	47	2	0.035	0.54	SVOC				6.0E+02	6.0E+02
1,4-DICHLOROBENZENE	0.0054	47	1	0.013	0.23	SVOC			150	3.4E+00	7.9E+00
2-METHYLNAPHTHALENE	5.00	17	7	8.42	26	SVOC					
ACENAPHTHENE	0.10	19	1	0.10	0.11	SVOC				3.7E+03	2.9E+04
BENZ[A]ANTHRACENE	0.023	8	2	0.048	0.1	SVOC				6.2E-01	2.1E+00
BENZIDINE	1.31	15	1	3.15	17	SVOC				2.1E-03	7.5E-03
BENZOIC ACID	0.089	17	1	0.10	0.16	SVOC				1.0E+05	1.0E+05
BETA-BHC	0.0090	13	2	0.018	0.062	SVOC					
BIS(2-ETHYLHEXYL) PHTHALATE	0.15	17	2	0.17	0.36	SVOC				3.5E+01	1.2E+02
CHRYSENE	0.091	17	2	0.10	0.2	SVOC				6.2E+01	2.1E+02
DI-N-BUTYL PHTHALATE	0.13	17	2	0.19	0.7	SVOC					
FLUORANTHENE	0.095	17	1	0.10	0.17	SVOC				2.3E+03	2.2E+04
FLUORENE	0.24	17	2	0.47	2.5	SVOC				2.7E+03	2.6E+04
NAPHTHALENE	2.85	34	19	3.86	11	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	0.82	17	5	1.59	6.5	SVOC					
PHENOL	0.10	17	2	0.11	0.098	SVOC				1.8E+04	1.0E+05
PYRENE	0.083	17	1	0.10	0.21	SVOC				2.3E+03	2.9E+04
DIESEL/OIL RANGE ORGANICS	6592	9	9	11209	22000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	22500	2	2		24000	TPH					
GASOLINE RANGE ORGANICS	587	9	6	1066	2000	TPH					
OIL & GREASE	19500	2	2		27000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	6433	30	24	9039	37000	TPH					
1,2,4-TRIMETHYLBENZENE	7.61	17	15	9.86	18	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	2.50	16	14	3.25	6	VOC				2.1E+01	7.0E+01
2-BUTANONE	0.0018	6	2	0.0038	0.007	VOC					

Table 3.2-7
Summary Statistics for Detected Compounds in Drilling Muds (Non-Pit and Non-Lagoon Areas)
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ACETONE	0.013	6	2	0.028	0.05	VOC				1.4E+04	5.4E+04
BENZENE	0.43	30	15	0.60	1.5	VOC			10	6.4E-01	1.4E+00
ETHYLBENZENE	2.18	30	19	2.97	8.9	VOC				4.0E+02	4.0E+02
ISOPROPYLBENZENE	1.73	17	14	2.35	5.9	VOC				5.7E+02	2.0E+03
M,P-XYLENES	7.16	17	14	9.71	18	VOC					
METHYLENE CHLORIDE	0.0051	29	2	0.0083	0.059	VOC				9.1E+00	2.1E+01
M-XYLENE	0.23	4	1		0.91	VOC					
N-BUTYLBENZENE	0.71	17	6	1.22	3.7	VOC				2.4E+02	2.4E+02
N-PROPYLBENZENE	2.65	17	15	3.57	8.1	VOC				2.4E+02	2.4E+02
O-XYLENE	2.43	21	13	3.53	8.5	VOC					
P-ISOPROPYLTOLUENE	1.84	17	14	2.46	5.3	VOC					
P-XYLENE	0.10	4	1		0.39	VOC					
SEC-BUTYLBENZENE	1.25	16	14	1.65	3.2	VOC				2.2E+02	2.2E+02
TOLUENE	1.18	29	18	1.73	6.9	VOC				5.2E+02	5.2E+02
TRICHLOROFLUOROMETHANE	0.0025	26	1	0.0060	0.057	VOC				3.9E+02	2.0E+03
XYLENES (TOTAL)	6.18	9	6	11.0	22	VOC				2.7E+02	4.2E+02

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-8
Summary Statistics for Detected Compounds in Impacted Soil, Composite Soil, and Unspecified Soil
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	1.47	51	15	2.02	8.5	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	12.2	56	41	16.0	**78**	METAL	500	50		3.9E-01	1.6E+00
BARIUM	675	56	56	829	***3100***	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.31	51	19	0.40	1.4	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.62	56	23	1.02	**12**	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	34.8	56	56	41.5	***180***	METAL	2500	50	100	2.1E+02	4.5E+02
CHROMIUM (VI)	0.013	32	1	0.025	0.23	METAL	500	50		3.0E+01	6.4E+01
COBALT	6.44	43	43	7.31	18	METAL	8000	800		9.0E+02	1.9E+03
COPPER	27.3	51	51	30.4	86	METAL	2500	250		3.1E+03	4.1E+04
LEAD	***140.19***	57	47	***219***	***2560***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.98	46	33	**2.30**	***37***	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	0.76	43	14	1.03	3.2	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	26.3	51	51	31.9	140	METAL	2000	200		1.6E+03	2.0E+04
ORGANIC LEAD	0.038	22	2	0.083	0.59	METAL					
SELENIUM	1.65	56	11	2.79	***28***	METAL	100	10	20	3.9E+02	5.1E+03
VANADIUM	34.8	51	51	38.3	75	METAL	2400	240		7.8E+01	1.0E+03
ZINC	140	52	52	193	1740	METAL	5000	2500		2.3E+04	1.0E+05
AROCLOR 1248	0.036	5	1	0.079	0.14	PCB				2.2E-01	7.4E-01
AROCLOR 1260	1.89	5	2	4.81	9	PCB				2.2E-01	7.4E-01
PCB	0.010	91	1	0.011	0.091	PCB	50	50		2.2E-01	7.4E-01
PCB-1248	0.081	19	1	0.18	1.1	PCB				2.2E-01	7.4E-01
4,4´-DDE	0.0061	38	5	0.011	0.45	PESTICIDE				1.7E+00	7.0E+00
4,4'-DDD	0.0019	24	1	0.0041	0.032	PESTICIDE	1	1		1.7E+00	7.0E+00
4,4'-DDT	0.0051	24	2	0.010	0.06	PESTICIDE	1	1		1.7E+00	7.0E+00
ALDRIN	0.0019	38	1	0.0041	0.05	PESTICIDE	1.4	1.4		2.9E-02	1.0E-01
alpha-BHC	0.0010	38	1	0.0017	0.016	PESTICIDE					
delta-BHC	0.0020	38	1	0.0041	0.049	PESTICIDE					
ENDOSULFAN I	0.0026	38	1	0.0056	0.071	PESTICIDE				3.7E+02	3.7E+03
ENDOSULFAN II	0.0017	38	2	0.0021	0.011	PESTICIDE					
GAMMA-BHC (LINDANE)	0.0032	38	3	0.0062	0.065	PESTICIDE	4	4	8		
HEPTACHLOR EPOXIDE	0.0016	38	1	0.0028	0.03	PESTICIDE	4.7	4.7	0.2	5.3E-02	1.9E-01
1,2-DICHLOROBENZENE	0.0018	106	1	0.0038	0.45	SVOC				6.0E+02	6.0E+02
1-METHYLNAPHTHALENE	35.0	2	2		65	SVOC					
2-METHYLNAPHTHALENE	8.17	51	15	12.5	100	SVOC					
ACENAPHTHENE	0.34	93	1	0.73	22	SVOC				3.7E+03	2.9E+04
ANTHRACENE	0.13	49	2	0.21	2.4	SVOC				2.2E+04	1.0E+05
BENZ[A]ANTHRACENE	0.010	8	1	0.027	0.082	SVOC				6.2E-01	2.1E+00
BENZO[A]PYRENE	0.0085	8	1	0.022	0.068	SVOC				6.2E-02	2.1E-01
BENZO[B]FLUORANTHENE	0.014	8	1	0.036	0.11	SVOC				6.2E-01	2.1E+00
BENZO[K]FLUORANTHENE	0.018	8	1	0.046	0.14	SVOC				6.2E+00	2.1E+01
beta-BHC	0.0025	38	3	0.0039	0.027	SVOC					
CHRYSENE	0.092	47	1	0.11	0.63	SVOC				6.2E+01	2.1E+02
DI-N-BUTYL PHTHALATE	0.11	49	2	0.12	0.51	SVOC					
FLUORANTHENE	0.16	48	2	0.27	3.2	SVOC				2.3E+03	2.2E+04
FLUORENE	0.67	48	3	1.56	26	SVOC				2.7E+03	2.6E+04
INDENO (1,2,3-cd) PYRENE	0.61	47	1	1.41	23	SVOC					
NAPHTHALENE	7.99	108	54	13.7	300	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	2.52	54	15	4.30	55	SVOC					
PYRENE	0.67	48	4	1.32	17	SVOC				2.3E+03	2.9E+04

Table 3.2-8
Summary Statistics for Detected Compounds in Impacted Soil, Composite Soil, and Unspecified Soil
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
DIESEL/OIL RANGE ORGANICS	8375	44	39	10641	30000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	13546	24	24	17219	33000	TPH					
GASOLINE RANGE ORGANICS	918	39	25	1226	4400	TPH					
OIL & GREASE	14792	36	36	19398	67000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	10534	78	67	13475	73000	TPH					
1,1,2-TRICHLOROETHANE	0.0081	59	1	0.021	0.45	VOC				7.3E-01	1.6E+00
1,2,3,4-TETRAHYDRO-1,1,6-TRIMETHYLNAPHTHALENE	0.13	1	1		0.13	VOC					
1,2,4-TRIMETHYLBENZENE	5.72	49	37	8.55	80	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	1.39	47	30	1.86	9.3	VOC				2.1E+01	7.0E+01
1-ETHYL-3,5-DIMETHYLBENZENE	12.6	2	2		25	VOC					
1-ETHYL-3-METHYLBENZENE	0.090	1	1		0.09	VOC					
2,4-DIMETHYLHEXANE	0.030	1	1		0.03	VOC					
2-BUTANONE	0.0048	9	4	0.0091	0.024	VOC					
4-CHLOROTOLUENE	0.038	47	2	0.085	1.2	VOC					
ACETONE	2.38	11	4	6.26	26	VOC				1.4E+04	5.4E+04
BENZENE	0.28	62	34	0.39	0.45	VOC			10	6.4E-01	1.4E+00
ETHYLBENZENE	1.58	64	45	2.03	11	VOC				4.0E+02	4.0E+02
ISOPROPYLBENZENE	0.85	47	33	1.09	4.6	VOC				5.7E+02	2.0E+03
M,P-XYLENE	2.95	53	39	3.87	4.3	VOC					
METHYLENE CHLORIDE	0.48	63	2	1.26	30	VOC				9.1E+00	2.1E+01
METHYLNAPHTHALENE ISOMERS	0.020	1	1		0.02	VOC					
N-BUTYLBENZENE	0.35	47	16	0.49	2	VOC				2.4E+02	2.4E+02
N-PROPYLBENZENE	1.39	47	36	1.79	7.5	VOC				2.4E+02	2.4E+02
OCTAHYDROINDENE	13.5	2	2		27	VOC					
O-XYLENE	1.55	57	37	2.06	10	VOC					
P-ISOPROPYLTOLUENE	0.87	47	33	1.12	3.5	VOC					
SEC-BUTYLBENZENE	0.59	47	30	0.76	3.2	VOC				2.2E+02	2.2E+02
STYRENE	0.12	54	3	0.25	3.3	VOC				1.7E+03	1.7E+03
TOLUENE	1.12	66	36	1.52	8.1	VOC				5.2E+02	5.2E+02
TRICHLOROFLUOROMETHANE	15.0	1	1		15	VOC				3.9E+02	2.0E+03
TRIMETHYLBENZENE ISOMERS	69.0	1	1		69	VOC					
XYLENES (TOTAL)	6.33	8	1	12.2	26	VOC				2.7E+02	4.2E+02

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-9
Summary Statistics for Detected Compounds in Pits A, B, C, D, E, G, H
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	2.40	41	19	3.04	8.7	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	8.10	48	31	10.0	29	METAL	500	50		3.9E-01	1.6E+00
BARIUM	181	49	49	216	790	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.48	41	28	0.58	1.2	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.45	48	8	0.78	7.8	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	35.7	48	48	**57.6**	***600***	METAL	2500	50	100	2.1E+02	4.5E+02
CHROMIUM (VI)	0.017	18	48	0.035	0.2	METAL	500	50		3.0E+01	6.4E+01
COBALT	9.23	40	40	10.2	19	METAL	8000	800		9.0E+02	1.9E+03
COPPER	58.1	41	41	109	**1300**	METAL	2500	250		3.1E+03	4.1E+04
LEAD	29.6	49	31	**53.8**	***640***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.024	27	11	0.036	0.17	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	0.64	40	7	1.05	8.5	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	18.4	40	40	20.5	40	METAL	2000	200		1.6E+03	2.0E+04
SELENIUM	2.18	49	2	4.74	***75***	METAL	100	10	20	3.9E+02	5.1E+03
SILVER	0.19	48	2	0.33	4.2	METAL	500	50	100	3.9E+02	5.1E+03
VANADIUM	39.9	40	40	43.2	67	METAL	2400	240		7.8E+01	1.0E+03
ZINC	92.2	40	40	110.9	430	METAL	5000	2500		2.3E+04	1.0E+05
AROCLOR 1260	0.029	12	1	0.047	0.15	PCB				2.2E-01	7.4E-01
4,4'-DDE	0.0024	24	1	0.0044	0.027	PESTICIDE	1	1		1.7E+00	7.0E+00
4,4'-DDT	0.0029	24	1	0.0051	0.027	PESTICIDE	1	1		1.7E+00	7.0E+00
CHLORDANE	0.011	20	1	0.016	0.061	PESTICIDE	2.5		0.6	1.6E+00	6.5E+00
1,2-DICHLOROBENZENE	0.012	73	2	0.020	0.35	SVOC				6.0E+02	6.0E+02
2-METHYLNAPHTHALENE	4.23	40	14	7.12	63	SVOC					
ACENAPHTHENE	0.18	80	3	0.24	2.3	SVOC				3.7E+03	2.9E+04
ANTHRACENE	0.17	40	3	0.25	1.7	SVOC				2.2E+04	1.0E+05
BENZIDINE	5.66	21	3	13.4	99	SVOC				2.1E-03	7.5E-03
BENZO[A]PYRENE	0.041	29	1	0.11	1.2	SVOC				6.2E-02	2.1E-01
BENZYL BUTYL PHTHALATE	0.022	29	1	0.057	0.63	SVOC					
BIS(2-ETHYLHEXYL) PHTHALATE	1.41	39	18	2.39	17	SVOC				3.5E+01	1.2E+02
CHRYSENE	0.30	40	5	0.46	2.8	SVOC				6.2E+01	2.1E+02
DIBENZ[A,H]ANTHRACENE	0.19	29	2	0.28	1.7	SVOC				6.2E-02	2.1E-01
DI-N-BUTYL PHTHALATE	0.33	40	17	0.51	4.3	SVOC					
FLUORANTHENE	0.37	40	2	0.72	8.4	SVOC				2.3E+03	2.2E+04
FLUORENE	0.14	40	3	0.19	1.1	SVOC				2.7E+03	2.6E+04
NAPHTHALENE	1.70	65	22	2.48	20	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	6.76	40	10	14.6	180	SVOC					
PHENOL	0.12	40	1	0.13	0.16	SVOC				1.8E+04	1.0E+05
PYRENE	0.48	40	8	0.79	5.8	SVOC				2.3E+03	2.9E+04
DIESEL/OIL RANGE ORGANICS	6239	22	21	9939	45000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	6722	12	12	10373	19000	TPH					
GASOLINE RANGE ORGANICS	816	12	6	1305	2700	TPH					
OIL & GREASE	11634	12	11	17909	35000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	4718	68	56	6589	47000	TPH					

Table 3.2-9
Summary Statistics for Detected Compounds in Pits A, B, C, D, E, G, H
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
1,2,4-TRIMETHYLBENZENE	1.50	25	13	2.59	14	VOC				5.2E+01	1.7E+02
1,2-DIBROMO-3-CHLOROPROPANE	0.0015	25	1	0.0018	0.006	VOC				4.5E-01	2.0E+00
1,3,5-TRIMETHYLBENZENE	0.31	25	7	0.51	2.2	VOC				2.1E+01	7.0E+01
2-BUTANONE	0.17	23	10	0.44	3.8	VOC					
2-HEXANONE	0.0001	23	1	0.00039	0.0034	VOC					
ACETONE	0.066	23	16	0.12	0.74	VOC				1.4E+04	5.4E+04
BENZENE	0.016	52	9	0.031	0.43	VOC			10	6.4E-01	1.4E+00
ETHYLBENZENE	0.36	52	20	0.63	6.4	VOC				4.0E+02	4.0E+02
ISOPROPYLBENZENE	0.57	25	13	0.89	3.8	VOC				5.7E+02	2.0E+03
m,p-XYLENES	0.46	25	9	1.00	8.1	VOC					
METHYLENE CHLORIDE	0.005	52	5	0.007	0.061	VOC				9.1E+00	2.1E+01
n-BUTYLBENZENE	0.077	25	4	0.15	0.78	VOC					
n-PROPYLBENZENE	0.90	25	12	1.38	5.7	VOC				2.4E+02	2.4E+02
o-XYLENE	0.09	25	6	0.16	0.69	VOC					
p-ISOPROPYLTOLUENE	0.53	25	10	0.92	4.8	VOC					
sec-BUTYLBENZENE	0.49	25	11	0.74	2.4	VOC				2.2E+02	2.2E+02
STYRENE	0.0012	48	1	0.0028	0.045	VOC				1.7E+03	1.7E+03
TETRACHLOROETHENE	0.0004	52	1	0.0006	0.0078	VOC				1.5E+00	3.4E+00
TOLUENE	0.018	52	14	0.033	0.45	VOC				5.2E+02	5.2E+02
XYLENES (TOTAL)	0.029	27	9	0.058	0.45	VOC				2.7E+02	4.2E+02

* Non-detect results are considered to be present at one-half the method detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 6 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-10
Summary Statistics for Detected Compounds in the Pit F Area
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	0.466	27	3	0.75	4.9	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	4.41	29	24	6.14	30	METAL	500	50		3.9E-01	1.6E+00
BARIUM	101	28	24	135	400	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	3.81	28	8	**9.61**	**99**	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.251	29	8	0.39	1.8	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	13.5	29	27	16.7	31	METAL	2500	50	100	2.1E+02	4.5E+02
CHROMIUM (VI)	0.017	22	1	0.036	0.25	METAL	500	50		3.0E+01	6.4E+01
COBALT	4.76	23	20	6.14	13	METAL	8000	800		9.0E+02	1.9E+03
COPPER	13.5	29	26	17.4	41	METAL	2500	250		3.1E+03	4.1E+04
LEAD	7.90	30	20	13.1	**94**	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.029	28	16	0.040	0.131	METAL	20	2	4	2.3E+01	3.1E+02
NICKEL	10.8	28	27	13.5	34	METAL	2000	200		1.6E+03	2.0E+04
SELENIUM	0.338	29	5	0.40	1.2	METAL	100	10	20	3.9E+02	5.1E+03
THALLIUM	3.77	28	1	9.64	**100**	METAL	700	70		5.2E+00	6.7E+01
VANADIUM	28.6	27	27	35.2	65	METAL	2400	240		7.8E+01	1.0E+03
ZINC	47.1	29	28	65.3	320	METAL	5000	2500		2.3E+04	1.0E+05
AROCLORr 1242	0.108	18	1	0.18	0.38	PCB					
AROCLORr 1254	0.058	18	1	0.099	0.19	PCB					
4,4'-DDT	0.073	23	2	0.13	0.16	PESTICIDE	1	1		1.7E+00	7.0E+00
ALDRIN	0.033	23	1	0.059	0.11	PESTICIDE	1.4	1.4		2.9E-02	1.0E-01
ENDOSULFAN II	0.021	22	1	0.026	0.054	PESTICIDE					
ENDRIN KETONE	0.015	22	1	0.019	0.035	PESTICIDE					
HEPTACHLOR EPOXIDE	0.048	23	1	0.096	***0.67***	PESTICIDE	4.7	4.7	0.2	5.3E-02	1.9E-01
1,1'-(1,2-ETHENEDIYL)BISBENZENE	2800	1	1		2800	SVOC					
1,1'-BIPHENYL	615	2	2		1200	SVOC				3.0E+03	2.3E+04
1-METHYLETHENYLBENZENE	1200	1	1		1200	SVOC					
1-METHYLNAPHTHALENE	18	1	1		18	SVOC					
1-PROPENYLBENZENE	100	1	1		100	SVOC					
2-BUTOXYETHANOL	13.0	1	1		13	SVOC					
2-ETHYL-1,1'-BIPHENYL	580	1	1		580	SVOC					
2-METHYL-1,1'-BIPHENYL	490	1	1		490	SVOC					
2-METHYLNAPHTHALENE	4.63	25	1	6.61	24	SVOC					
ANTHRACENE	9.67	26	3	20.9	180	SVOC				2.2E+04	1.0E+05
BENZALDEHYDE	12.0	1	1		12	SVOC				6.1E+03	6.2E+04
beta-BHC	0.036	22	1	0.076	0.54	SVOC					
BIS(2-ETHYLHEXYL) PHTHALATE	12.5	24	1	26.0	200	SVOC				3.5E+01	1.2E+02
FLUORANTHENE	50.7	23	3	129	1100	SVOC				2.3E+03	2.2E+04
NAPHTHALENE	38.1	60	39	52.1	300	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	3434	27	20	6998	55000	SVOC					
PHENOL	0.208	25	1	0.28	0.8	SVOC				1.8E+04	1.0E+05
sec-BUTYLBENZENE	20.8	31	26	33.6	180	SVOC				2.2E+02	2.2E+02

Table 3.2-10
Summary Statistics for Detected Compounds in the Pit F Area
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
DIESEL/OIL RANGE ORGANICS	32804	22	20	71353	540000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	11118	20	19	17597	69000	TPH					
GASOLINE RANGE ORGANICS	983	22	13	1463	4500	TPH					
OIL & GREASE	3935	24	22	6429	36000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	46753	22	19	119097	970000	TPH					
(1-METHYLETHENYL)BENZENE	67	3	3		180	VOC					
(1-METHYLPROPYL)BENZENE	41	1	1		41	VOC					
(2-METHYLPROPYL)BENZENE	5.30	1	1		5.3	VOC					
1,2,3,5-TETRAMETHYLBENZENE	70	1	1		70	VOC					
1,2,4-TRIMETHYLBENZENE	2.19	31	12	4.23	36	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	0.755	31	4	1.58	15	VOC				2.1E+01	7.0E+01
1,4-DIETHYLBENZENE	490	1	1		490	VOC					
1-ETHENYL-2-METHYLBENZENE	770	1	1		770	VOC					
1-ETHENYL-4-ETHYLBENZENE	31	1	1		31	VOC					
1-METHYLPROPYLBENZENE	370	1	1		370	VOC					
2-BUTANONE	2.15	2	1		4.3	VOC					
ACETONE	0.336	3	2		0.95	VOC				1.4E+04	5.4E+04
BENZENE	1.69	36	13	2.98	***24***	VOC			10	6.4E-01	1.4E+00
CARBON DISULFIDE	0.650	2	1		1.3	VOC				3.6E+02	7.2E+02
DIETHYLBENZENES	63.0	1	1		63	VOC					
DIMETHYLINDAN	1.10	1	1		1.1	VOC					
ETHYLBENZENE	60.9	38	31	99.5	670	VOC				4.0E+02	4.0E+02
ETHYLMETHYLBENZENE ISOMERS	11.0	1	1		11	VOC					
INDAN	2.20	1	1		2.2	VOC					
INDENE	9.80	1	1		9.8	VOC					
ISOPROPYLBENZENE	19.9	32	27	31.4	160	VOC				5.7E+02	2.0E+03
m,p-XYLENES	1.69	31	4	3.77	39	VOC					
METHYLENE CHLORIDE	0.025	28	1	0.029	0.055	VOC				9.1E+00	2.1E+01
METHYLINDAN	1.10	1	1		1.1	VOC					
METHYLNAPHTHALENE	0.880	1	1		0.88	VOC					
n-BUTYLBENZENE	0.356	31	3	0.64	4.9	VOC					
n-PROPYLBENZENE	3.24	31	24	5.05	28	VOC				2.4E+02	2.4E+02
OCTAHYDROINDENE	0.260	1	1		0.26	VOC					
ORGANIC LEAD	0.116	20	3	0.29	2.18	VOC					
o-XYLENE	0.601	33	3	1.50	18	VOC					
p-ISOPROPYLTOLUENE	0.699	31	8	1.12	5	VOC					
STYRENE	32.8	37	17	65.7	720	VOC				1.7E+03	1.7E+03
TETRAMETHYLBENZENE	2.30	1	1		2.3	VOC					
TOLUENE	2.00	37	18	3.54	28	VOC				5.2E+02	5.2E+02
TRICHLOROFLUOROMETHANE	0.018	21	3	0.025	0.052	VOC				3.9E+02	2.0E+03

Table 3.2-10
Summary Statistics for Detected Compounds in the Pit F Area
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)

* Non-detect results are considered to be present at one-half the undiluted method detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Summary statistics include styrene wastes, impacted soils, and drilling muds present in the vicinity of Pit F.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-11
Summary Statistics for Detected Compounds in Fill Materials
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	0.97	12	2	1.75	4.8	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	1.17	17	1	2.69	16	METAL	500	50		3.9E-01	1.6E+00
BARIUM	221	17	15	307	620	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.097	12	2	0.16	0.48	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.29	18	3	0.57	2.8	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	28.9	18	16	40.9	***120***	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	5.69	12	10	7.30	11	METAL	8000	800		9.0E+02	1.9E+03
COPPER	28.5	13	10	36.5	58	METAL	2500	250		3.1E+03	4.1E+04
LEAD	135	19	16	292	***1800***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.072	15	2	0.12	0.29	METAL	20	2	4	2.3E+01	3.1E+02
MOLYBDENUM	0.29	12	2	0.55	1.9	METAL	3500	3500		3.9E+02	5.1E+03
NICKEL	15.9	13	11	22.0	50	METAL	2000	200		1.6E+03	2.0E+04
THALLIUM	2.60	12	1	6.54	29	METAL	700	70		5.2E+00	6.7E+01
VANADIUM	23.2	13	10	31.4	51	METAL	2400	240		7.8E+01	1.0E+03
ZINC	77.4	13	11	101	200	METAL	5000	2500		2.3E+04	1.0E+05
PCB	0.0016	56	1	0.0042	0.088	PCB	50	50		2.2E-01	7.4E-01
GAMMA-CHLORDANE	0.0057	3	1		0.017	PESTICIDE					
3,3'-DICHLOROBENZIDINE	0.099	12	1	0.10	0.082	SVOC				1.1E+00	3.8E+00
BENZ[A]ANTHRACENE	0.011	10	1	0.029	0.11	SVOC				6.2E-01	2.1E+00
BETA-BHC	0.0088	9	1	0.022	0.075	SVOC					
BIS(2-ETHYLHEXYL) PHTHALATE	0.13	13	1	0.13	0.13	SVOC				3.5E+01	1.2E+02
CHRYSENE	0.089	13	2	0.11	0.22	SVOC				6.2E+01	2.1E+02
DI-N-BUTYL PHTHALATE	0.13	26	2	0.18	0.77	SVOC					
FLUORANTHENE	0.092	13	2	0.093	0.1	SVOC				2.3E+03	2.2E+04
NAPHTHALENE	0.0013	17	1	0.0026	0.014	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	0.084	13	1	0.085	0.078	SVOC					
PYRENE	0.15	13	4	0.27	1	SVOC				2.3E+03	2.9E+04
EXTRACTABLE FUEL HYDROCARBONS (C10-C30)	8103	6	6	21228	18000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	1230	33	21	2472	25000	TPH					
VOLATILE FUEL HYDROCARBONS	0.97	3	1		2.9	TPH					
1,2,4-TRIMETHYLBENZENE	0.0033	4	1		0.012	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	0.0009	5	1		0.0033	VOC				2.1E+01	7.0E+01
2-BUTANONE	0.0026	8	2	0.0056	0.013	VOC					
ACETONE	0.015	8	2	0.032	0.072	VOC				1.4E+04	5.4E+04
BENZENE	0.0004	13	1	0.00051	0.0015	VOC			10	6.4E-01	1.4E+00
CHLOROBENZENE	0.0005	18	2	0.00083	0.0032	VOC			2000	1.5E+02	5.3E+02
ETHYLBENZENE	0.0006	13	2	0.00088	0.0025	VOC				4.0E+02	4.0E+02
M,P-XYLENES	0.0020	4	1		0.0067	VOC					
METHYLENE CHLORIDE	0.0033	14	1	0.0034	0.003	VOC				9.1E+00	2.1E+01
N-PROPYLBENZENE	0.0009	4	1		0.0028	VOC				2.4E+02	2.4E+02
O-XYLENE	0.0008	5	1	0.0017	0.003	VOC					
TOLUENE	0.043	10	8	0.086	0.26	VOC				5.2E+02	5.2E+02
XYLENES (TOTAL)	0.0033	8	1	0.0063	0.016	VOC				2.7E+02	4.2E+02

Table 3.2-11
Summary Statistics for Detected Compounds in Fill Materials
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-12
Summary Statistics for Detected Compounds in Native Soils
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)
ANTIMONY	2.51	19	9	3.51	8.1	METAL	500	150		3.1E+01	4.1E+02
ARSENIC	4.60	19	11	6.87	24	METAL	500	50		3.9E-01	1.6E+00
BARIUM	75.8	19	19	102	250	METAL	10000	1000	2000	5.4E+03	6.7E+04
BERYLLIUM	0.29	19	11	0.42	1.2	METAL	75	7.5	150	1.5E+02	1.9E+03
CADMIUM	0.076	19	2	0.14	0.65	METAL	100	10	20	3.7E+01	4.5E+02
CHROMIUM (TOTAL)	13.1	19	18	16.6	30	METAL	2500	50	100	2.1E+02	4.5E+02
COBALT	6.28	19	18	8.17	16	METAL	8000	800		9.0E+02	1.9E+03
COPPER	17.8	19	18	23.5	46	METAL	2500	250		3.1E+03	4.1E+04
LEAD	11.4	19	6	26.8	***180***	METAL	1000	50	100	4.0E+02	8.0E+02
MERCURY	0.030	7	2	0.069	0.17	METAL	20	2	4	2.3E+01	3.1E+02
NICKEL	10.0	19	18	12.9	22	METAL	2000	200		1.6E+03	2.0E+04
SELENIUM	0.44	19	1	0.68	3.1	METAL	100	10	20	3.9E+02	5.1E+03
THALLIUM	2.50	19	3	4.95	27	METAL	700	70		5.2E+00	6.7E+01
VANADIUM	25.3	19	19	32.5	61	METAL	2400	240		7.8E+01	1.0E+03
ZINC	51.8	19	18	73.5	260	METAL	5000	2500		2.3E+04	1.0E+05
DELTA-BHC	0.0034	12	1	0.0086	0.038	PESTICIDE					
2-METHYLNAPHTHALENE	0.81	17	4	1.96	12	SVOC					
ACENAPHTHENE	0.12	17	1	0.16	0.5	SVOC				3.7E+03	2.9E+04
ANTHRACENE	0.093	17	1	0.11	0.22	SVOC				2.2E+04	1.0E+05
BIS(2-ETHYLHEXYL) PHTHALATE	0.25	17	9	0.35	1	SVOC				3.5E+01	1.2E+02
CHRYSENE	0.13	17	1	0.21	0.91	SVOC				6.2E+01	2.1E+02
DI-N-BUTYL PHTHALATE	0.22	17	7	0.30	0.74	SVOC					
FLUORENE	0.15	17	1	0.25	1.1	SVOC				2.7E+03	2.6E+04
NAPHTHALENE	1.80	29	5	4.00	38	SVOC				5.6E+01	1.9E+02
PHENANTHRENE	0.27	17	2	0.56	3	SVOC					
PYRENE	0.10	17	1	0.15	0.55	SVOC				2.3E+03	2.9E+04
DIESEL/OIL RANGE ORGANICS	1342	9	2	3533	12000	TPH					
EXTRACTABLE FUEL HYDROCARBONS (C6 - C40)	2616	5	2	6886	13000	TPH					
GASOLINE RANGE ORGANICS	201	5	1	530	1000	TPH					
OIL AND GREASE	7002	5	1	18515	35000	TPH					
TOTAL RECOVERABLE HYDROCARBONS	1019	32	9	2197	21000	TPH					
1,2,4-TRIMETHYLBENZENE	1.201	12	4	2.65	10	VOC				5.2E+01	1.7E+02
1,3,5-TRIMETHYLBENZENE	0.29	12	1	0.77	3.5	VOC				2.1E+01	7.0E+01
2-BUTANONE	0.38	10	5	1.01	3.8	VOC					
ACETONE	0.10	10	9	0.22	0.74	VOC				1.4E+04	5.4E+04
BENZENE	0.035	28	1	0.091	0.96	VOC			10	6.4E-01	1.4E+00
ETHYLBENZENE	5.94	28	5	15.3	160	VOC				4.0E+02	4.0E+02
ISOPROPYLBENZENE	17.7	12	6	46.5	210	VOC				5.7E+02	2.0E+03
m,p-XYLENES	0.77	12	2	2.03	9.2	VOC					
METHYLENE CHLORIDE	0.0070	28	3	0.011	0.061	VOC				9.1E+00	2.1E+01
n-BUTYLBENZENE	0.0032	12	1	0.0078	0.034	VOC					
n-PROPYLBENZENE	1.29	12	5	2.96	12	VOC				2.4E+02	2.4E+02
p-ISOPROPYLTOLUENE	0.22	12	2	0.57	2.6	VOC					
sec-BUTYLBENZENE	3.56	12	5	9.17	41	VOC				2.2E+02	2.2E+02
TOLUENE	0.010	28	4	0.022	0.17	VOC				5.2E+02	5.2E+02
XYLENES (TOTAL)	0.0018	11	1	0.0024	0.0053	VOC				2.7E+02	4.2E+02

Table 3.2-12
Summary Statistics for Detected Compounds in Native Soils
Ascon Landfill Site

Analyte	Mean Sample Concentration* (mg/kg)	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/kg)	Maximum Concentration (mg/kg)	Analyte Type	TTLC (mg/kg)	10xSTLC (mg/kg)	20xTCLP (mg/kg)	Residential PRG (mg/kg)	Industrial PRG (mg/kg)

* Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table.
Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.
Values in **bold** exceed 10x STLC; values in *italics* exceed 10x TCLP; values in **shaded cells** exceed TTLC.
STLC - Soluble Threshold Leaching Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-13

Summary Statistics for Soluble Threshold Limit Concentration Analyses

Ascon Landfill Site

Type	Analyte	STLC Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected STLC Concentration (mg/L) [1,2]
Lagoons 1-3	ARSENIC	0.87	10	9	1.3	2.5
Lagoons 1-3	BARIUM	23.9	12	12	30.3	41
Lagoons 1-3	CHROMIUM (TOTAL)	3.04	13	11	4.0	**5.4**
Lagoons 1-3	LEAD	3.53	12	12	**6.1**	**17**
Lagoons 4,5	ARSENIC	1.18	6	6	1.7	2.6
Lagoons 4,5	BARIUM	13.6	6	6	16.3	18
Lagoons 4,5	CHROMIUM (TOTAL)	2.44	6	6	3.8	**6.1**
Lagoons 4,5	LEAD	0.74	5	4	1.4	2.2
Soil Composite	ARSENIC	1.17	2	2		1.6
Soil Composite	BARIUM	21.3	7	7	26.3	32
Soil Composite	CADMIUM	0.15	1	1		0.15
Soil Composite	CHROMIUM (TOTAL)	2.28	4	4	3.3	4.1
Soil Composite	LEAD	**9.36**	8	8	**14.6**	**30**
Drilling Mud	ANTIMONY	0.21	2	1		0.41
Drilling Mud	ARSENIC	1.41	3	3	2.3	2.2
Drilling Mud	BARIUM	15.6	4	4	22.3	27
Drilling Mud	BERYLLIUM	ND	2	0		
Drilling Mud	CADMIUM	ND	2	0		
Drilling Mud	CHROMIUM (TOTAL)	1.43	3	3	2.3	2.2
Drilling Mud	COBALT	ND	2	0		
Drilling Mud	COPPER	ND	2	0		
Drilling Mud	LEAD	**5.13**	4	4	**8.5**	**10**
Drilling Mud	MERCURY	ND	2	0		
Drilling Mud	MOLYBDENUM	ND	2	0		
Drilling Mud	NICKEL	0.53	2	2		0.62
Drilling Mud	SELENIUM	ND	2	0		
Drilling Mud	SILVER	ND	2	0		
Drilling Mud	THALLIUM	ND	2	0		

Table 3.2-13

Summary Statistics for Soluble Threshold Limit Concentration Analyses

Ascon Landfill Site

Type	Analyte	STLC Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected STLC Concentration (mg/L) [1,2]
Drilling Mud	VANADIUM	0.76	2	2		0.84
Drilling Mud	ZINC	5.50	2	2		7.2
Drilling Muds - Highly Liquid	ANTIMONY	0.10	7	2	0.22	0.35
Drilling Muds - Highly Liquid	ARSENIC	1.90	7	7	4.03	**7.9**
Drilling Muds - Highly Liquid	BARIUM	14.6	7	7	22.0	35
Drilling Muds - Highly Liquid	BERYLLIUM	ND	7	0		
Drilling Muds - Highly Liquid	CADMIUM	ND	7	0		
Drilling Muds - Highly Liquid	CHROMIUM (TOTAL)	2.56	7	7	4.90	**8.3**
Drilling Muds - Highly Liquid	COBALT	0.036	7	1	0.11	0.25
Drilling Muds - Highly Liquid	COPPER	0.30	7	1	0.89	2.1
Drilling Muds - Highly Liquid	LEAD	**6.10**	7	5	**11.7**	**16**
Drilling Muds - Highly Liquid	MERCURY	ND	7	0		
Drilling Muds - Highly Liquid	MOLYBDENUM	ND	7	0		
Drilling Muds - Highly Liquid	NICKEL	0.66	7	7	0.98	1.5
Drilling Muds - Highly Liquid	SELENIUM	0.016	7	1	0.047	0.11
Drilling Muds - Highly Liquid	SILVER	ND	7	0		
Drilling Muds - Highly Liquid	THALLIUM	ND	7	0		
Drilling Muds - Highly Liquid	VANADIUM	0.59	7	7	0.72	0.86
Drilling Muds - Highly Liquid	ZINC	7.59	7	7	12.8	22
Impacted Soil	ARSENIC	1.90	1	1		1.9
Impacted Soil	BARIUM	13.0	1	1		13
Impacted Soil	CHROMIUM (TOTAL)	1.60	1	1		1.6
Impacted Soil	LEAD	3.75	2	2		4.6
Pit F/Styrene Waste	ANTIMONY	ND	1	0		
Pit F/Styrene Waste	ARSENIC	ND	1	0		
Pit F/Styrene Waste	BARIUM	ND	1	0		
Pit F/Styrene Waste	BERYLLIUM	ND	1	0		

Table 3.2-13

Summary Statistics for Soluble Threshold Limit Concentration Analyses

Ascon Landfill Site

Type	Analyte	STLC Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected STLC Concentration (mg/L) [1,2]
Pit F/Styrene Waste	CADMIUM	ND	1	0		
Pit F/Styrene Waste	CHROMIUM (TOTAL)	ND	1	0		
Pit F/Styrene Waste	COBALT	ND	1	0		
Pit F/Styrene Waste	COPPER	ND	1	0		
Pit F/Styrene Waste	LEAD	ND	1	0		
Pit F/Styrene Waste	MERCURY	ND	1	0		
Pit F/Styrene Waste	MOLYBDENUM	ND	1	0		
Pit F/Styrene Waste	NICKEL	ND	1	0		
Pit F/Styrene Waste	SELENIUM	0.13	1	1		0.13
Pit F/Styrene Waste	SILVER	ND	1	0		
Pit F/Styrene Waste	THALLIUM	ND	1	0		
Pit F/Styrene Waste	VANADIUM	ND	1	0		
Pit F/Styrene Waste	ZINC	ND	1	0		

ND - Not Detected

Result in **bold** indicates value exceeds STLC limit (see note 2, below)

[1] 50% of the undiluted detection limit was assumed for non-detects in determination of the average concentration of detected analytes. Standard deviation and confidence intervals determined only for analytes with 3 or more analyses per waste stream.

[2] STLC limits for detected metals (in milligrams per liter):
Antimony - 15; Arsenic - 5; Barium - 100; Cadmium - 1; Chromium - 5; Cobalt - 80; Lead - 5; Nickel - 20;
Selenium - 1; Vanadium - 24; Zinc - 250

Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-14
Summary Statistics for Toxicity Characteristic Leachate Procedure Analyses
Ascon Landfill Site

Type	Analyte	TCLP Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected TCLP Concentration (mg/L) [1,2]
Lagoons 1-3	ARSENIC	0.13	7	3	0.22	0.22
Lagoons 1-3	BARIUM	2.71	10	8	4.03	8.6
Lagoons 1-3	CHROMIUM (TOTAL)	0.43	12	1	1.13	**5.1**
Lagoons 1-3	LEAD	0.30	14	3	0.64	2.9
Lagoons 4,5	ARSENIC	0.20	5	2	0.39	0.62
Lagoons 4,5	BARIUM	2.26	7	7	2.90	3.9
Lagoons 4,5	CHROMIUM (TOTAL)	0.02	6	1	0.055	0.12
Lagoons 4,5	LEAD[3]	**7.26**	8	1	**19.2**	**58**
Soil Composite	BARIUM	2.10	1	1		2.1
Soil Composite	LEAD	0.19	4	2	0.37	0.42
Drilling Mud	ARSENIC	0.08	3	1	0.18	0.2
Drilling Mud	BARIUM	0.58	3	1	1.50	1.7
Drilling Mud	CADMIUM	ND	1	0		
Drilling Mud	CHROMIUM (TOTAL)	ND	1	0		
Drilling Mud	LEAD	0.63	4	1	1.66	2.5
Drilling Mud	MERCURY	0.11	2	1		**0.22**
Drilling Mud	SELENIUM	ND	1	0		
Drilling Mud	SILVER	ND	1	0		
Drilling Muds - Highly Liquid	ANTIMONY	ND	1	0		
Drilling Muds - Highly Liquid	ARSENIC	ND	1	0		
Drilling Muds - Highly Liquid	BARIUM	2.26	4	1	4.56	5.8
Drilling Muds - Highly Liquid	BERYLLIUM	ND	1	0		
Drilling Muds - Highly Liquid	CADMIUM	ND	1	0		
Drilling Muds - Highly Liquid	CHROMIUM (TOTAL)	ND	1	0		
Drilling Muds - Highly Liquid	COBALT	ND	1	0		
Drilling Muds - Highly Liquid	COPPER	ND	1	0		
Drilling Muds - Highly Liquid	LEAD	ND	1	0		
Drilling Muds - Highly Liquid	MERCURY	ND	1	0		

Table 3.2-14

Summary Statistics for Toxicity Characteristic Leachate Procedure Analyses

Ascon Landfill Site

Type	Analyte	TCLP Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected TCLP Concentration (mg/L) [1,2]
Drilling Muds - Highly Liquid	MOLYBDENUM	ND	1	0		
Drilling Muds - Highly Liquid	NICKEL	ND	1	0		
Drilling Muds - Highly Liquid	SELENIUM	ND	1	0		
Drilling Muds - Highly Liquid	SILVER	ND	1	0		
Drilling Muds - Highly Liquid	THALLIUM	ND	1	0		
Drilling Muds - Highly Liquid	VANADIUM	ND	1	0		
Drilling Muds - Highly Liquid	ZINC	ND	1	0		
Fill Soil	ARSENIC	ND	1	0		
Fill Soil	BARIUM	ND	1	0		
Fill Soil	CADMIUM	ND	1	0		
Fill Soil	CHROMIUM (TOTAL)	ND	1	0		
Fill Soil	LEAD	ND	1	0		
Fill Soil	MERCURY	0.048	3	2	0.09	0.077
Fill Soil	SELENIUM	ND	1	0		
Fill Soil	SILVER	ND	1	0		
Impacted Soils	ARSENIC	ND	1	0		
Impacted Soils	BARIUM	0.54	4	1	1.39	2.1
Impacted Soils	CADMIUM	ND	1	0		
Impacted Soils	CHROMIUM (TOTAL)	ND	1	0		
Impacted Soils	LEAD	ND	1	0		
Impacted Soils	MERCURY	ND	1	0		
Impacted Soils	SELENIUM	ND	1	0		
Impacted Soils	SILVER	ND	1	0		
Native Soils	ARSENIC	ND	1	0		
Native Soils	BARIUM	ND	1	0		
Native Soils	CADMIUM	ND	1	0		
Native Soils	CHROMIUM (TOTAL)	ND	1	0		
Native Soils	LEAD	ND	1	0		
Native Soils	MERCURY	0.011	5	2	0.02	0.0039

Table 3.2-14

Summary Statistics for Toxicity Characteristic Leachate Procedure Analyses

Ascon Landfill Site

Type	Analyte	TCLP Mean Sample Concentration (mg/L) [1,2]	Number of Samples Analyzed	Total Number of Detects	Mean + 95% Confidence Interval (mg/L) [1,2]	Maximum Detected TCLP Concentration (mg/L) [1,2]
Native Soils	SELENIUM	ND	1	0		
Native Soils	SILVER	ND	1	0		

ND - Not Detected

Result in **bold** indicates value exceeds TCLP limit (see note 2, below)

[1] Non-detect results are considered to be present at one-half the undiluted detection limit for statistical calculations shown on this table. Upper 95% confidence interval (CI) (mean plus 95% CI) was not determined for analytes with fewer than 5 total analyses.

[2] TCLP limits for detected metals (in milligrams per liter):
Arsenic - not established; Barium - 100; Chromium - 5; Lead - 5; Mercury - 0.20

[3] TCLP-Lead reported at 58 mg/L in a single sample from Lagoon 4. Result could not be confirmed from original laboratory report.

Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.2-15
Pilot Study No. 3, Ignitability and pH Results
Ascon Landfill Site

Sample ID	Analyte	Result	Location/Waste Type	
Lagoons 1, 2 and 3				
PNL-L1A	Ignitability	(>140 °F)	Lagoon 1	Tarry Liquid
PNL-L1B	Ignitability	(>140 °F)	Lagoon 1	Tarry Liquid
PNL-L2A	Ignitability	(>140 °F)	Lagoon 2	Tarry Liquid
PNL-L2B	Ignitability	(>140 °F)	Lagoon 2	Tarry Liquid
PNL-L3A	Ignitability	(>140 °F)	Lagoon 3	Tarry Liquid
PNL-L3B	Ignitability	(>140 °F)	Lagoon 3	Tarry Liquid
PNL-L1A	pH	7.77	Lagoon 1	Tarry Liquid
PNL-L1B	pH	7.67	Lagoon 1	Tarry Liquid
PNL-L2B	pH	8.21	Lagoon 2	Tarry Liquid
PNL-L2A	pH	7.97	Lagoon 2	Tarry Liquid
PNL-L3B	pH	7.57	Lagoon 3	Tarry Liquid
PNL-L3A	pH	7.36	Lagoon 3	Tarry Liquid
Lagoons 4 and 5				
PNL-L4A	Ignitability	(>140 °F)	Lagoon 4	Highly Liquid Drilling Muds
PNL-L4B	Ignitability	(>140 °F)	Lagoon 4	Highly Liquid Drilling Muds
PNL-L5A	Ignitability	(>140 °F)	Lagoon 5	Highly Liquid Drilling Muds
PNL-L5B	Ignitability	(>140 °F)	Lagoon 5	Highly Liquid Drilling Muds
PNL-L4A	pH	7.97	Lagoon 4	Highly Liquid Drilling Muds
PNL-L4B	pH	7.61	Lagoon 4	Highly Liquid Drilling Muds
PNL-L5A	pH	7.91	Lagoon 5	Highly Liquid Drilling Muds
PNL-L5B	pH	7.05	Lagoon 5	Highly Liquid Drilling Muds
Pit Wastes (non-Pit F)				
PNL-PAI	Ignitability	(>140 °F)	Pit A	Composite
PNL-PBI	Ignitability	(>140 °F)	Pit B	Composite
PNL-PCI	Ignitability	(>140 °F)	Pit C	Composite
PNL-PCIA	Ignitability	(>140 °F)	Pit C	Composite
PNL-PD1B	Ignitability	(>140 °F)	Pit D	Composite
PNL-PDI	Ignitability	(>140 °F)	Pit D	Composite
PNL-PEI	Ignitability	(>140 °F)	Pit E	Composite
PNL-PGI	Ignitability	(>140 °F)	Pit G	Composite
PNL-PHI-11	Ignitability	(>140 °F)	Pit H	Highly Liquid Drilling Muds
PNL-PHI-7	Ignitability	(>140 °F)	Pit H	Highly Liquid Drilling Muds
PNL-PHI-8.5	Ignitability	(>140 °F)	Pit H	Highly Liquid Drilling Muds
PNL-PHI-12.5	Ignitability	(>140 °F)	Pit H	Native
PNL-PAI	pH	8.5	Pit A	Composite
PNL-PBI	pH	8.57	Pit B	Composite
PNL-PCI	pH	8.03	Pit C	Composite
PNL-PCIA	pH	7.77	Pit C	Composite
PNL-PD1B	pH	10.5	Pit D	Composite
PNL-PDI	pH	8.07	Pit D	Composite
PNL-PEI	pH	8.01	Pit E	Composite
PNL-PGI	pH	7.86	Pit G	Composite
PNL-PHI-7	pH	8.85	Pit H	Highly Liquid Drilling Muds
PNL-PHI-8.5	pH	8.78	Pit H	Highly Liquid Drilling Muds
PNL-PHI-11	pH	8.56	Pit H	Highly Liquid Drilling Muds
PNL-PHI-12.5	pH	8.04	Pit H	Native

Table 3.2-15
Pilot Study No. 3, Ignitability and pH Results
Ascon Landfill Site

Sample ID	Analyte	Result	Location/Waste Type	
Pit F Area Wastes				
PIT-F-BOTTOM	Ignitability	**<140**	Pit F	Pit F Waste
PIT-F-SAMPLE	Ignitability	**<140**	Pit F	Pit F Waste
PNL-11	Ignitability	(>140 °F)	Pit F	Composite
PNL-12	Ignitability	(>140 °F)	Pit F	Composite
PNL-BA11-Stockpile	Ignitability	(>140 °F)	Pit F	Composite
PNL-F4-11.5 & 14.5	Ignitability	(>140 °F)	Pit F	Composite
PNL-12-FILL	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F1-10.5, 12.5, 13.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F1-7.5 AND 9	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F18-12	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F18-9.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F21-11.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F21-9.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F25-19	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F3-14.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F4-17 & 17.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F5-14 & 14.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F6-12 & 14	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F6-5.5 & 11.5	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F7-8.5 & 11	Ignitability	(>140 °F)	Pit F	Impacted Soil
PNL-F17-10	Ignitability	(>140 °F)	Pit F	Native
PNL-F19-10.5	Ignitability	(>140 °F)	Pit F	Native
PNL-F27-8.5	Ignitability	(>140 °F)	Pit F	Native
PNL-F9-14	Ignitability	(>140 °F)	Pit F	Native
PIT-F-BOTTOM	pH	8.16	Pit F	Pit F Waste
PIT-F-SAMPLE	pH	7.29	Pit F	Pit F Waste
PNL-11	pH	8.15	Pit F	Composite
PNL-12	pH	8.44	Pit F	Composite
PNL-BA11-Stockpile	pH	8.15	Pit F	Composite
PNL-F4-11.5 & 14.5	pH	8.6	Pit F	Composite
PNL-12-FILL	pH	8.36	Pit F	Impacted Soil (Pit F Area)
PNL-F1-10.5, 12.5, 13.5	pH	7.61	Pit F	Impacted Soil (Pit F Area)
PNL-F1-7.5 AND 9	pH	8.05	Pit F	Impacted Soil (Pit F Area)
PNL-F18-12	pH	8.45	Pit F	Impacted Soil (Pit F Area)
PNL-F18-9.5	pH	8.28	Pit F	Impacted Soil (Pit F Area)
PNL-F21-11.5	pH	8.37	Pit F	Impacted Soil (Pit F Area)
PNL-F21-9.5	pH	8.55	Pit F	Impacted Soil (Pit F Area)
PNL-F25-19	pH	7.7	Pit F	Impacted Soil (Pit F Area)
PNL-F3-14.5	pH	8	Pit F	Impacted Soil (Pit F Area)
PNL-F4-17 & 17.5	pH	8.42	Pit F	Impacted Soil (Pit F Area)
PNL-F5-14 & 14.5	pH	8.87	Pit F	Impacted Soil (Pit F Area)
PNL-F6-12 & 14	pH	8.55	Pit F	Impacted Soil (Pit F Area)
PNL-F6-5.5 & 11.5	pH	7.9	Pit F	Impacted Soil (Pit F Area)
PNL-F7-8.5 & 11	pH	8.65	Pit F	Impacted Soil (Pit F Area)
PNL-F17-10	pH	8.83	Pit F	Native (Pit F Area)

Table 3.2-15
Pilot Study No. 3, Ignitability and pH Results
Ascon Landfill Site

Sample ID	Analyte	Result	Location/Waste Type	
PNL-F19-10.5	pH	9.08	Pit F	Native (Pit F Area)
PNL-F27-8.5	pH	8.29	Pit F	Native (Pit F Area)
PNL-F9-14	pH	8.03	Pit F	Native (Pit F Area)
Other Areas				
PNL-TP03-Stockpile	Ignitability	(>140 °F)	Drilling Mud	
PNL-TP04-Stockpile	Ignitability	(>140 °F)	Drilling Mud	
PNL-02	Ignitability	(>140 °F)	Composite	
PNL-1	Ignitability	(>140 °F)	Composite	
PNL-13	Ignitability	(>140 °F)	Composite	
PNL-14	Ignitability	(>140 °F)	Composite	
PNL-3	Ignitability	(>140 °F)	Composite	
PNL-4	Ignitability	(>140 °F)	Composite	
PNL-5	Ignitability	(>140 °F)	Composite	
PNL-6	Ignitability	(>140 °F)	Composite	
PNL-7	Ignitability	(>140 °F)	Composite	
PNL-8	Ignitability	(>140 °F)	Composite	
PNL-9	Ignitability	(>140 °F)	Composite	
PNL-BA01-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-BA03-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-BA06-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-BA07-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-BA08-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-BA13-Stockpile	Ignitability	(>140 °F)	Composite	
PNL-13-FILL	Ignitability	(>140 °F)	Impacted Soil	
PNL-9 FILL	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP01-Stockpile	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP02-Stockpile	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP05-Stockpile	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP06-Stockpile	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP07-Stockpile	Ignitability	(>140 °F)	Impacted Soil	
PNL-TP03-Stockpile	pH	8.29	Drilling Mud	
PNL-TP04-Stockpile	pH	8.6	Drilling Mud	
PNL-02	pH	8.18	Composite	
PNL-1	pH	10.6	Composite	
PNL-13	pH	8.34	Composite	
PNL-14	pH	8.78	Composite	
PNL-3	pH	9.1	Composite	
PNL-4	pH	8.35	Composite	
PNL-5	pH	10.4	Composite	
PNL-6	pH	9.39	Composite	
PNL-7	pH	8.15	Composite	
PNL-8	pH	9.34	Composite	
PNL-9	pH	9.12	Composite	
PNL-BA01-Stockpile	pH	10.3	Composite	
PNL-BA03-Stockpile	pH	9.75	Composite	
PNL-BA06-Stockpile	pH	8.87	Composite	
PNL-BA07-Stockpile	pH	9.49	Composite	
PNL-BA08-Stockpile	pH	9.85	Composite	

Table 3.2-15
Pilot Study No. 3, Ignitability and pH Results
Ascon Landfill Site

Sample ID	Analyte	Result	Location/Waste Type
PNL-BA13-Stockpile	pH	9.18	Composite
PNL-13-FILL	pH	8.41	Impacted Soil
PNL-9 FILL	pH	9.57	Impacted Soil
PNL-TP01-Stockpile	pH	8.92	Impacted Soil
PNL-TP02-Stockpile	pH	9.3	Impacted Soil
PNL-TP05-Stockpile	pH	8	Impacted Soil
PNL-TP06-Stockpile	pH	8.23	Impacted Soil
PNL-TP07-Stockpile	pH	8.56	Impacted Soil

Summarized data include all applicable soil/waste data from the RI Report (ESE, 1997b), the TM1ROF (Project Navigator, Ltd., 2003), and Pilot Study No. 3, reported in this RFS.

Table 3.3-1

Summary of General Mineral and Metal Concentrations in Huntington Beach Flood Control Channel Water Sample
Ascon Landfill Site

Analytes	Seawater[1]	Flood Control Channel Dec. 20, 2004
General Minerals	mg/l	mg/l
Calcium	423	340
Magnesium	1330	1100
Potassium	411	370
Sodium	11080	9600
Bicarbonate Alkalinity as CaCO3	146	120
Carbonate Alkalinity as CaCO3		<2.0
Hydroxide Alkalinity as CaCO3		<2.0
Chloride	19930	19000
Sulfate	2791	2500
Total Dissolved Solids		33000
Metals	ug/l	ug/l
Mercury	0.03	<0.00020
Antimony	0.21	<8.0
Arsenic	4.12	<4.0
Barium	2.06	19
Beryllium	0.001	<2.0
Cadmium	0.05	<4.0
Chromium	0.31	<4.0
Cobalt	0.052	<4.0
Copper	0.52	9
Lead	0.031	<4.0
Molybdenum	10.3	12
Nickel	0.52	<4.0
Selenium	0.21	89
Silver	0.04	<4.0
Thallium	0.01	<4.0
Vanadium	2.06	<4.0
Zinc	2.06	<4.0

Note: sample collected on 12/20/2004 at Magnolia Street bridge.
mg/l: milligrams per liter
ug/l: micrograms per liter
[1] Seawater data from Drever, James I., "The Geochemistry of Natural Waters," 1982. Converted to mg/l or ug/l using specific gravity of 1.03.

Table 3.3-2
General Mineral Concentrations in Groundwater
Ascon Landfill Site

Site Location	Sample Date	Calcium (mg/l)	Magnesium (mg/l)	Potassium (mg/l)	Sodium (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Bicarbonate Alkalinity as CaCO3 (mg/l)	Alkalinity as CaCO3 (mg/l)	Specific Conductance (umhos/cm)	Total Dissolved Solids (mg/l)
AW1	04/22/04	430	240	56	3200	5200	1100	650	650	19000	10000
AW4A	04/16/04	410	790	440	7400	13000	1900	350	350	36000	26000
AW5	04/19/04	420 J+	610 J-	190 J	5100 J+	8800	1600	500	500	26000	18000
B4A	04/19/04	21	32	10	5600	10000	1600	490	490	31000	19000
B4A Dup.	04/19/04	21	33	11	5900	11000	1600	480	480	31000	19000
MW9	04/16/04	390	770	280	6300	11000	1800	440	440	32000	23000
MW16	03/16/04	590 J-	200 J+	28	1400 J	3200	780	360	360	11000	6800
MW17	03/16/04	860	220	50	1800	5100	140	360	360	14000	8400
MW18	04/12/04	300 J-	230 J-	56	1000 J+	1400	1100	560	560	7000	4600
MW20	04/13/04	710 J-	120	17	760 J-	2700	46	180	180	8600	6600
NMW2	04/16/04	960	420	410	4700	9200	1600	540	540	28000	21000

mg/l: milligrams per liter
umhos/cm: micro mhos per centimeter
Dup.: Duplicate
J: estimated value
J+: estimated with a high bias
J-: estimated with a low bias

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-3
VOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Chloro-methane	Ethyl-benzene	Isopropyl-benzene	m,p-Xylenes	Naphthalene	n-Butyl-benzene	n-Propyl-benzene	o-Xylene	p-Isopropyl-toluene	sec-Butyl benzene	Toluene
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
AW1	Q1 2004	04/22/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2 2004	06/11/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3 2004	09/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4 2004	12/15/04	**3.1**	<1	<1	<1	<0.5	<1	<1	<1	**1.2**	<1	<1	<1	<1	<1	<1	**2.3**	<1
	Q4_2006	12/8/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
AW1A	Q1	04/15/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/11/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/15/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/8/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
AW-2	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
AW3	PNL	06/15/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q1 Dup	04/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/10/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	**1.3**	<1	<1	<1	<1	<1	<1	<1
	Q4	12/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/5/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
AW-4	PNL	06/15/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
AW4A	Q1	04/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/15/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/17/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/12/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/12/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
AW5	PNL	06/15/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/19/04	<1	<1	<1	<1	<0.5	<1	<1	**43**	<1	**35**	<1	<1	<1	<1	<1	<1	<1
	Q2	06/14/04	<1	<1	<1	<1	<0.5	<1	<1	**30**	<1	**8.2**	<1	<1	<1	<1	<1	<1	<1
	Q3	09/16/04	<1	<1	<1	<1	<0.5	<1	<1	**37**	<1	**9.1**	<1	<1	<1	<1	<1	<1	<1
	Q4	12/17/04	<1	<1	<1	<1	<0.5	<1	<1	**7.9**	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/13/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
AW8	Q3	09/16/04	<1	<1	<1	**1.2**	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/15/04	<1	<1	<1	**2**	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/11/2006	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B4	PNL	06/14/02	**15**	**2.9**	<2	<2	**61**	<2	<5	**16**	**6.8**	**7**	**20**	<5	**6.7**	<2	<2	<5	**3.1**
B4A	Q1	04/19/04	**12**	**3.2**	<1	<1	**10**	<1	<1	**7**	**2.3**	**5.3**	**7.5**	<1	**2.6**	**1.4**	<1	<1	**1.6**
	Q1 Dup	04/19/04	**18**	**5.1**	<1	<1	**16**	<1	<1	**11**	**3.6**	**7.8**	**12**	<1	**4**	**1.6**	**1.3**	<1	**2.4**
	Q2	06/17/04	**10**	**2.5**	<1	<1	**31**	<1	<1	**3.2**	**3.2**	**1.4**	**11**	<1	**3.2**	**1.8**	<1	<1	<1
	Q2 Dup	06/17/04	**8.9**	**1.9**	<1	<1	**24**	<1	**2**	**2.4**	**2.6**	<1	**7.9**	<1	**2.6**	**1.4**	<1	<1	<1
	Q3	09/15/04	**12**	**1.4**	<1	<1	**46**	<1	<1	**11**	**4.1**	**6.2**	**12**	<1	**3.7**	**16**	<1	<1	**3.9**
	Q4	12/20/04	**1.3**	<1	<1	<1	**2.5**	<1	<1	<1	**1.5**	<1	<1	<1	**1.6**	<1	<1	<1	<1
	Q4 Dup	12/20/04	<1	<1	<1	<1	**1.8**	<1	<1	<1	**1.2**	<1	<1	<1	**1.2**	<1	<1	<1	<1
	Q4_2006	12/13/2006	**34**	**7**	<1	<1	**70**	<1	<1	**41**	**8.8**	**32**	**30**	**1.8**	**8**	**30**	**1.7**	**1.6**	**28**

Table 3.3-3
VOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Chloro-methane	Ethyl-benzene	Isopropyl-benzene	m,p-Xylenes	Naphthalene	n-Butyl-benzene	n-Propyl-benzene	o-Xylene	p-Isopropyl-toluene	sec-Butyl benzene	Toluene
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
B7	PNL	06/15/02	<8	<8	<8	<8	<4	<8	<20	**10**	**300**	<8	<20	<20	<8	<8	<8	**24**	<8
	Q1	04/19/04	<1	<1	<1	<1	<0.5	<1	<1	**1.7**	**92**	<1	**1.3**	<1	**1.9**	<1	<1	**6**	<1
	Q2	06/12/04	<2	<2	<2	<2	<1	<2	<2	**3.9**	**200**	<2	<2	<2	**4.9**	<2	<2	**13**	<2
	Q3	09/17/04	<1	<1	<1	<1	<0.5	<1	<1	**2.7**	**230**	<1	**5.9**	<1	**6**	<1	<1	**16**	<1
	Q3 Dup	09/17/04	<1	<1	<1	<1	<0.5	<1	<1	**2.9**	**200**	<1	**8.8**	<1	**5.6**	<1	<1	**15**	<1
	Q4	12/20/04	<1	<1	<1	<1	<0.5	<1	<1	**3.4**	**200**	<1	**15**	<1	**7.3**	<1	<1	**19**	<1
	Q4_2006	12/13/2006	**<2**	**<2**	**<2**	**<2**	**<1**	**<2**	**<2**	**5.5**	**260**	**<2**	**30**	**<2**	**7.2**	**<2**	**<2**	**16**	**<2**
GP01	Q1	04/20/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/17/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/17/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/17/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP12	Q1	04/21/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/16/04	<1	<1	<1	<1	<0.5	<1	**1.7**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/17/04	<10	<10	<10	<10	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	Q4	12/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/12/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
GP23	Q1	04/22/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/12/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/12/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
GP24	Q1	04/20/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	<1
	Q2	06/17/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/17/04	<10	<10	<10	<10	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	Q4	12/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW04	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	PNL Dup	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/13/04	**1.7**	<1	<1	<1	**0.53**	<1	<1	<1	<1	**3.4**	**1**	<1	<1	**1.2**	<1	<1	**2.3**
	Q4	12/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW09	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/15/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/11/04	<1	<1	<1	<1	**0.53**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/14/04	<1	<1	<1	<1	**3.2**	**2**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/8/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**

Table 3.3-3
VOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Chloro-methane	Ethyl-benzene	Isopropyl-benzene	m,p-Xylenes	Naphthalene	n-Butyl-benzene	n-Propyl-benzene	o-Xylene	p-Isopropyl-toluene	sec-Butyl benzene	Toluene
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MW13	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/10/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/13/04	**2**	<1	<1	<1	**0.51**	<1	<1	<1	<1	**3.8**	<1	<1	<1	**1.4**	<1	<1	**2.3**
	Q4	12/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4 Dup	12/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/7/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MW15	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	PNL Dup	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/15/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/10/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/7/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MW16	PNL	08/09/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	03/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/08/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/08/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/11/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/6/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MW17	PNL	08/09/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	03/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/08/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2 Dup	06/08/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/08/04	<1 J-	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/11/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/07/06	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MW18	PNL	08/09/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/12/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/6/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Q4_2006	12/6/2006	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MW19	Q1	04/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/09/04	<1	<1	<1	<1	<0.5	<1	**2.5**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3 Dup	09/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/05/06	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**

Table 3.3-3
VOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Benzene	Chloro-benzene	Chloro-methane	Ethyl-benzene	Isopropyl-benzene	m,p-Xylenes	Naphthalene	n-Butyl-benzene	n-Propyl-benzene	o-Xylene	p-Isopropyl-toluene	sec-Butyl benzene	Toluene
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MW20	Q1	04/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/09/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/13/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NMW1	PNL	06/14/02	<2	<2	**2.2**	**5.6**	<1	<2	<5	<2	<2	<2	<5	<1	<2	<2	<2	<5	<2
	Q3	09/15/04	<1	<1	<1	**1.3**	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/15/04	<1	<1	<1	**1.1**	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NMW2	PNL	06/14/02	<2	<2	<2	<2	<1	<2	<5	<2	<2	<2	<5	<5	<2	<2	<2	<5	<2
	Q1	04/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q2	06/12/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q3	09/14/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4	12/16/04	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Q4_2006	12/11/06	**<1**	**<1**	**<1**	**<1**	**<0.5**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
MCL			--	--	--	5	1	70	--	300	--	1750	--	--	--	1750	--	--	150

ug/l: micrograms per liter J-: estimated low bias
Dup: Duplicate
Only detected analytes shown. Detections shown in bold.
MCL: California Maximum Detection Limit. MCL for xylene is sum of isomers.
: Shaded area indicates concentration detected above MCL.

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-4
SVOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	2,4-Dimethylphenol	2-Methylphenol	Benzoic Acid	Naphthalene
			(ug/l)	(ug/l)	(ug/l)	(ug/l)
AW1	Q1	04/22/04	<20	<10	<20	<10
	Q2	06/11/04	<20	<10	<20	<10
	Q3	09/14/04	<20	<10	<20	<10
	Q4	12/15/04	<20	<10	<20	<10
	Q4_2006	12/8/2006	<1.9	<1.9	<19	<0.94
AW1A	Q1	04/15/04	<20	<10	<20	<10
	Q2	06/11/04	<20	<10	<20	<10
	Q3	09/14/04	<20	<10	<20	<10
	Q4	12/15/04	<20	<10	<20	<10
	Q4_2006	12/8/2006	<1.9	<1.9	<19	<0.94
AW-2	PNL	06/14/02	<20	<10	<20	<10
AW3	PNL	06/15/02	<20	<10	<20	<10
	Q1	04/14/04	<20	<10	<20	<10
	Q1 Dup	04/14/04	<20	<10	<20	<10
	Q2	06/10/04	<20	<10	<20	<10
	Q3	09/13/04	<20 J-	<10 J-	<20 J-	<10
	Q4	12/14/04	<20	<10	<20 J-	<10
	Q4_2006[1]	12/5/2006	<1.9	<1.9	<19	<0.94
AW4	PNL	06/15/02	<20	<10	<20	<10
AW4A	Q1	04/16/04	<20	<10	<20	<10
	Q2	06/16/04	<20	<10	<20	<10
	Q3	09/15/04	<20 J-	<10 J-	<20	<10
	Q4	12/17/04	<20	<10	<20	<10
	Q4_2006	12/12/2006	<1.9	<1.9	<19	<0.94
	Q4_2006	12/12/2006	<1.9	<1.9	<19	<0.94
AW5	PNL	06/15/02	<20	<10	<20	<10
	Q1	04/19/04	<20	<10	<20	<10
	Q2	06/14/04	<20	<10	<20	<10
	Q3	09/16/04	<20 R	<10 R	<20	<10
	Q4	12/17/04	<20	<10	<20	<10
	Q4_2006	12/13/2006	<1.9	<1.9	<19	<0.94
AW8	Q3	09/16/04	<20 J-	<10 J-	<20	<10
	Q4	12/15/04	<20	<10	<20	<10
	Q4_2006	12/13/2006	<1.9	<1.9	<19	<0.94
B4	PNL	06/14/02	**230**	<50	<100	<50
B4A	Q1	04/19/04	**140**	**36**	<20	<10
	Q1 Dup	04/19/04	**97**	**29**	<20	<10
	Q2	06/17/04	**110**	**37**	<50	<25
	Q2 Dup	06/17/04	**130**	<40	<80	<40
	Q3	09/15/04	**192**	**652**	<20	<10
	Q4	12/20/04	<20	<10	<20	<10
	Q4 Dup	12/20/04	<20	<10	<20	<10
	Q4_2006	12/13/2006	**1500**	**2100**	<1900	<94
B7	PNL	06/15/02	<20	<10	<20	<10
	Q1	04/19/04	<20	<10	<20	<10
	Q2	06/12/04	<20	<10	**20**	<10
	Q3	09/17/04	<20	<10	<20	<10
	Q3 Dup	09/17/04	<20	<10	<20	<10
	Q4	12/20/04	<20	<10	<20	<10
	Q4_2006	12/13/2006	<19	<19	<190	**20**

Table 3.3-4
SVOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	2,4-Dimethylphenol	2-Methylphenol	Benzoic Acid	Naphthalene
			(ug/l)	(ug/l)	(ug/l)	(ug/l)
GP01	Q1	04/20/04	<20	<10	<20	<10
	Q2	06/17/04	<20	<10	<20	<10
	Q3	09/17/04	<20 J-	<10 J-	<20	<10
	Q4	12/17/04	<20	<10	<20	<10
GP12	Q1	04/21/04	<20	<10	<20	<10
	Q2	06/16/04	<20	<10	<20	<10
	Q3	09/17/04	<20	<10	<20	<10
	Q4	12/16/04	<20	<10	<20	<10
	Q4_2006	12/12/2006	<19	<19	<190	<9.5
GP23	Q1	04/22/04	<20	<10	<20	<10
	Q2	06/12/04	<20	<10	<20	<10
	Q3	09/16/04	<20	<10	<20	<10
	Q4	12/16/04	<20	<10	<20	<10
	Q4_2006	12/12/2006	<19	<19	<190	<9.5
GP24	Q1	04/20/04	<20	<10	<20	<10
	Q2	06/17/04	<20	<10	<20	<10
	Q3	09/17/04	<20	<10	<20	<10
	Q4	12/16/04	<20	<10	<20	<10
MW04	PNL	06/14/02	<20	<10	<20	<10
	PNL Dup	06/14/02	<20	<10	<20	<10
	Q1	04/14/04	<20	<10	<20	<10
	Q2	06/09/04	<20	<10	<20	<10
	Q3	09/13/04	<20 J-	<10 J-	<20	<10
	Q4	12/13/04	<20	<10	<20 J-	<10
MW09	PNL	06/14/02	<20	<10	<20	<10
	Q1	04/15/04	<20	<10	<20	<10
	Q2	06/11/04	<20	<10	<20	<10
	Q3	09/14/04	<20 J-	<10 J-	<20	<10
	Q4	12/14/04	<20	<10	<20 J-	<10
	Q4_2006	12/8/2006	<1.9	<1.9	<19	<.94
MW13	PNL	06/14/02	<20	<10	<20	<10
	Q1	04/14/04	<20	<10	<20	<10
	Q2	06/10/04	<20	<10	<20	<10
	Q3	09/13/04	<20 J-	<10 J-	<20 J-	<10
	Q4	12/14/04	<20	<10	<20 J-	<10
	Q4 Dup	12/14/04	<20	<10	<20 J-	<10
	Q4_2006[2]	12/7/2006	<1.9	<1.9	<19	<0.94
MW15	PNL	06/14/02	<20	<10	<20	<10
	PNL Dup	06/14/02	<20	<10	<20	<10
	Q1	04/15/04	<20	<10	<20	<10
	Q2	06/10/04	<20	<10	<20	<10
	Q3	09/14/04	<20 J-	<10 J-	<20 J-	<10
	Q4	12/14/04	<20	<10	<20 J-	<10
	Q4_2006[2]	12/7/2006	<1.9	<1.9	<19	<0.94
MW16	PNL	08/09/02	<20	<10	<20	<10
	Q1	03/16/04	<20	<10	<20	<10
	Q2	06/08/04	<20	<10	<20	<10
	Q3	09/08/04	<20 J-	<10 J-	<20 J-	<10
	Q4	12/11/04	<20	<10	<20	<10
	Q4_2006[1]	12/6/2006	<1.9	<1.9	<19	<0.96

Table 3.3-4
SVOC Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	2,4-Dimethylphenol	2-Methylphenol	Benzoic Acid	Naphthalene
			(ug/l)	(ug/l)	(ug/l)	(ug/l)
MW17	PNL	08/09/02	<20	<10	<20	<10
	Q1	03/16/04	<20	<10	<20	<10
	Q2	06/08/04	<20	<10	<20	<10
	Q2 Dup	06/08/04	<20	<10	<20	<10
	Q3	09/08/04	<20 J-	<10J-	<20	<10
	Q4	12/11/04	<20	<10	<20	<10
	Q4_2006[1]	12/7/2006	<1.9	<1.9	<19	<0.94
MW18	PNL	08/09/02	<20	<10	<20	<10
	Q1	04/12/04	<20	<10	<20	<10
	Q2	06/09/04	<20	<10	<20	<10
	Q3	09/09/04	<20	<10	<20	<10
	Q4	12/13/04	<20 J-	<10 J-	<20 J-	<10
	Q4_2006[1]	12/6/2006	<1.9	<1.9	<19	<0.95
	Q4_2006	12/6/2006	<1.9	<1.9	<19	<0.95
MW19	Q1	04/13/04	<20	<10	<20	<10
	Q2	06/09/04	<20	<10	<20	<10
	Q3	09/09/04	<20	<10	<20	<10
	Q3 Dup	09/09/04	<20	<10	<20	<10
	Q4	12/13/04	<20	<10	<20 J-	<10
	Q4_2006[1]	12/5/2006	<1.9	<1.9	<19	<0.94
MW20	Q1	04/13/04	<20	<10	<20	<10
	Q2	06/09/04	<20	<10	<20	<10
	Q3	09/16/04	<20	<10	<20	<10
	Q4	12/13/04	<20	<10	<20 J-	<10
NMW1	PNL	06/14/02	<20	<10	<20	<10
	Q3	09/15/04	<20	<10	<20	<10
	Q4	12/15/04	<20	<10	<20	<10
NMW2	PNL	06/14/02	<20	<10	<20	<10
	Q1	04/16/04	<20	<10	<20	<10
	Q2	06/12/04	<20	<10	<20	<10
	Q3	09/14/04	<20	<10	<20	<10
	Q4	12/16/04	<20	<10	<20	<10
	Q4_2006	12/11/2006	<1.9	<1.9	<19	<0.94

ug/l: micrograms per liter
Dup: Duplicate
Only detected analytes shown
J-: qualified with a low bias
R: rejected due to low percent recovery in the LCS
[1] Di-n-butylphthalate reported as qualified non-detected because of detection in equipment blank (EB-1).
[2] Bis(2-ethylhexyl)phthalate reported as qualified non-detected because of detection in equipment blank (EB-1).

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-5

Metal Concentrations in Groundwater

Ascon Landfill Site

Site Location	Event	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
AW1	Q1	04/22/04	2.5	3.8	72	<0.5 J-	<1	2	1.8	11	<1	<0.0002	11	2.1	58	<1 J-	<1	<1	<20 J-
	Q2	06/11/04	<2	2.6	67	<0.5	<1	1.7	1.5	5.3	<1	<0.0002	9.3	4.3	74	<1	<1	<1	<20
	Q3	09/14/04	<6	3	130	<1.5	<3	<3	<3	<6	<3	<0.0002	<3	5.5	31	<3	<3	<3	<60
	Q4	12/15/04	<4	4.7	57	<1	<2	2.2	<2	11	<2	<0.0002	19	9.7	93	<2	<2	<2	<40
AW1A	Q1	04/15/04	<2	1.2	100	<0.5	<1	1.1	1.7	4.5	<1	<0.0002	3.2	<1	30	<1	<1	<1	<20
	Q2	06/11/04	<2	<1	100	<0.5	<1	<1	1.9	4.1	<1	<0.0002	1.2	4.6	62	<1	<1	<1	<20
	Q3	09/14/04	<6	5.8	82	<1.5	<3	<3	<3	<6	<3	<0.0002	13	4	34	<3	<3	<3	<60
	Q4	12/15/04	<4	2.5	94	<1	<2	<2	<2	4	<2	<0.0002	6.6	2	36	<2	<2	<2	<40
AW2	PNL	06/14/02	11	<25	10	<4	<5	<5	<10	<10	<25	<0.0002	<20	<10	<5	<10	<5	<10	<20
	Q4_2006	12/11/2006	<4	<2	110	16	<2	<4	2	6.3	<2	<0.0002J	8.6	9.1	61	<2	<2	<4	<40
AW3	PNL	06/15/02	<10	<25	130	<4	<5	9.6	<10	<10	<25	<0.0002	<20	<10	<5	<10	<5	16	25
	Q1	04/14/04	<2	<1	120	<0.5	<1	1.2	1.5	3.5	<1	<0.0002	2.9	<1	49	<1	<1	<1	<20
	Q1 Dup	04/14/04	<2	<1	120	<0.5	<1	1.2	1.5	3.7	<1	<0.0002	3	<1	52	<1	<1	<1	<20
	Q2	06/10/04	<2	<1	110	<0.5 J-	<1 J-	1.6	1.8	3	<1	<0.0002 R	1.9	2.6	74 J-	<1	<1	1.5	<20 J-
	Q3	09/13/04	<2	<1	100	<0.5	<1	2	1.2	2.5	<1	<0.0002	1.8	2	59	<1	<1	<1	<20
	Q4	12/14/04	<2	<1	130	<0.5	<1	2.2	1.4	2.3	<1	<0.0002	7.8	2.1	63 J-	1.3	<1	<1	<20 J-
AW4	PNL	06/15/02	<20	<25	90	<8	<10	<10	<20	<20	<25	<0.0002	<40	<20	<10	<20	<10	<20	<40
AW4A	Q1	04/16/04	<2	<1	100	<0.5 J-	<1	2.6	3	13	<1	<0.0002	13	5.2	110 J-	<1	<1	<1	<20 J-
	Q2	06/16/04	<2	<1	100	<0.5	<1	2	2.5	13	<1	<0.0002	12	1.4	72	<1	<1	<1	30
	Q3	09/15/04	<6	3.1	100	<1.5	<3	<3	<3	7.8	<3	<0.0002	13	5.1	59	<3	<3	<3	<60
	Q4	12/17/04	<4	5.2	100	<1	<2	<2	<2	7.1	<2	<0.0002	17	5.4	120	<2	<2	<2	<40
AW5	PNL	06/15/02	<10	<25	72	<4	<5	<5	<10	<10	<25	<0.0002	31	<10	<5	<10	<5	10	21
	Q1	04/19/04	<2	<1	71 J+	<0.5 J-	<1	1.9	2.3	13	<1	<0.0002	10 J+	<1	49	<1	<1	<1	<20 J-
	Q2	06/14/04	<2	<1	53	<0.5	<1	1.4	1.6	7.1	<1	<0.0002	6.8	4.3	82	<1	<1	<1	<20
	Q3	09/16/04	<6	<3	66	<1.5	<3	<3	<3	<6	<3	<0.0002	6.3	5	73	<3	<3	<3	<60
	Q4	12/17/04	<4	<2	60	<1	<2	<2	<2	5.9	<2	<0.0002	12	3.7	86	<2	<2	<2	<40
AW8	Q3	09/16/04	<6	<3	130	<1.5	<3	<3	<3	<6	<3	<0.0002	<3	<3	89	<3	<3	<3	<60
	Q4	12/15/04	<4	<2	120	<1	<2	<2	<2	4.5	<2	<0.0002	<2	<2	98	<2	<2	<2	<40
B4	PNL	06/14/02	12	9.4	1200	<4	<5	18	<10	79	10	<0.0002	84	97	<5	<10	<5	<10	73
B4A	Q1	04/19/04	<2	<1	250	<0.5	<1	3.5	2.5	15	<1	<0.0002	7.6	3	90	<1	<1	1.6	<20
	Q1 Dup	04/19/04	<2	<1	250	<0.5	<1	3.4	2.5	16	<1	<0.0002	6.5	4	100	<1	<1	<1	<20
	Q2	06/17/04	<2	3	170	<0.5	<1	3.2	1.8	9.8	<1	<0.0002	16	2	97	<1	<1	4.9	<20
	Q2 Dup	06/17/04	<2	2.7	180	<0.5	<1	3.1	1.8	9.9	<1	<0.0002	11	1.6	85	<1	<1	4.1	<20
	Q3	09/15/04	<6	16	340	<1.5	<3	3.9	<3	6.1	<3	<0.0002	19	7.4	62	<3	<3	13	<60
	Q4	12/20/04	<4	2.3	210	<1	<2	2.9	<2	5.4	<2	<0.0002	<2	<2	77	<2	<2	4.4	<40
	Q4 Dup	12/20/04	<4	2.3	200	<1	<2	3.3	<2	5.2	<2	<0.0002	<2	<2	70	<2	<2	4.8	<40
	Q4_2006	12/13/2006	<20	11	1200	<5	<10	<20	<10	<20	<10	<0.0002	180	<20	74	<10	<10	23	<200
B7	PNL	06/15/02	<10	<25	190	<4	<5	47	<10	22	<25	<0.0002	<20	53	<5	<10	<5	11	84
	Q1	04/19/04	<2	<1	180	<0.5	<1	3.7	1.7	7.2	<1	<0.0002	<1	2	73	<1	<1	6.8	<20
	Q2	06/12/04	<2	<1	120	<0.5	<1	2.9	1.6	4	<1	<0.0002	<1	5.7	88	<1	<1	7.2	<20
	Q3	09/17/04	<6	<3	140	<1.5	<3	3.5	<3	<6	<3	<0.0002	<3	5.5	68	<3	<3	3.3	<60
	Q3 Dup	09/17/04	<6	<3	140	<1.5	<3	3.5	<3	<6	<3	<0.0002	<3	5.4	69	<3	<3	5.2	<60
	Q4	12/20/04	<4	<2	150	<1	<2	2.8	<2	<4	<2	<0.0002	<2	<2	57	<2	<2	6.9	<40
	Q4_2006	12/13/2006	<2	1.6	180	<0.5	<1	3.2	1.8	4.3	<1	<0.0002R	<2	11	49	<1	<1	8.3	<20

Table 3.3-5
Metal Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
GP01	Q1	04/20/04	<2	<1	110	<0.5	<1	2.2	3.8	18	<1	<0.0002	5.5	<1	70	<1	<1	<1	<20
	Q2	06/17/04	<2	<1	100	<0.5	<1	3.1	3.8	14	<1	<0.0002	5.9	<1	95	<1	<1	<1	<20
	Q3	09/17/04	<10	<5	170	<2.5	<5	7.5	<5	<10	<5	<0.0002	11	7.3	140	<5	<5	<5	<100
	Q4	12/17/04	<4	<2	98	<1	<2 J-	2.8	2.8	7.3	<2	<0.0002	8	4.1	110	<2	<2	<2	<40 J-
GP12	Q1	04/21/04	<2	<1	90	<0.5	<1	2.6	1.5	<2	<1	<0.0002	<1	4.7	80	<1	<1	2.7	<20
	Q2	06/16/04	<2	<1	82	<0.5	<1	3	1.4	<2	<1	<0.0002	<1	4	92 J-	<1	<1	3.2	<20 J-
	Q3	09/17/04	<2	<1	25	<0.5	<1	1	<1	<2	<1	<0.0002	<1	2.8	28	<1	<1	<1	<20
	Q4	12/16/04	<2	8.7	120	<0.5	<1	2.6	1.1	<2	<1	<0.0002	2.4	4	60	<1	<1	3.3	<20
GP23	Q1	04/22/04	<2	<1	360	<0.5	<1	2.5	2	6.9	<1	<0.0002	<1	3.6	82	<1	<1	<1	<20
	Q2	06/12/04	<2	1.3	370	<0.5	<1	3	1.9	4	<1	<0.0002	<1	4.7	94	<1	<1	2.1	<20
	Q3	09/16/04	<6	<3	640	<1.5	<3	5	<3	<6	<3	<0.0002	<3	12	86	<3	<3	<3	<60
	Q4	12/16/04	<4	<2	520	<1	<2	3.2	<2	<4	<2	<0.0002	<2	<2	60	2.1	<2	2.6	<40
GP24	Q1	04/20/04	<2	2.2	550	<0.5	<1	5.3	1.5	<2	<1	<0.0002	<1	<1	43	<1	<1	7.4	<20 J-
	Q2	06/17/04	<2	26	540	<0.5	<1	4.8	1.5	2.2	<1	<0.0002	5.4	<1	54	<1	<1	11	<20
	Q3	09/17/04	<2	1.8	170	<0.5	<1	2	<1	<2	<1	<0.0002	<1	<1	17	<1	<1	2.7	<20
	Q4	12/16/04	<2	5.6	460	<0.5	<1	4.6	1.3	<2	<1	<0.0002	1.5	<1	39	<1	<1	6	<20
MW04	PNL	06/14/02	<10	<25	24	<4	<5	<5	<10	11	<25	<0.0002	<20	28	<5	<10	<5	<10	<20
	PNL Dup	06/14/02	11	<25	30	<4	<5	<5	<10	<10	<25	<0.0002	<20	<10	<5	<10	<5	<10	<20
	Q1	04/14/04	<2	<1	26	<0.5	<1	<1	<1	<2	<1	<0.0002	<1	<1	12	<1	<1	<1	<20
	Q2	06/09/04	<2	<1	31	<0.5	<1	<1	<1	<2	<1	<0.0002	<1	<1	12	<1	<1	<1	<20
	Q3	09/13/04	<2	<1	27	<0.5	<1	<1	<1	<2	<1	<0.0002	<1	1.2	13	<1	<1	<1	<20
	Q4	12/13/04	<2	<1	30	<0.5	<1	<1	<1	<2	<1	<0.0002	<1	<1	14	<1	<1	<1	<20
MW09	PNL	06/14/02	<10	<25	96	<4	<5	<5	<10	13	<25	<0.0002	<20	<10	<5	<10	7.4	<10	<20
	Q1	04/15/04	<2	<1	130	<0.5	<1	2.7	1.9	12	<1	<0.0002	<1	3.5	82	<1	<1	<1	<20
	Q2	06/11/04	<2	<1	140	<0.5 J-	<1 J-	2.5	2.7	9.3	<1	<0.0002	<1	8.9	120 J-	<1	<1	<1	<20 J-
	Q3	09/14/04	<6	<3	180	<1.5	<3	3.2	<3	8.7	<3	<0.0002	<3	4.6	61	<3	<3	<3	<60
	Q4	12/14/04	<2	<1	140	<0.5	<1	2.5	1.5	5.4	<1	<0.0002	<1	5.2	110	<1	<1	<1	<20
MW13	PNL	06/14/02	<10	5.6	78	<4	<5	<5	<10	<10	<25	<0.0002	<20	<10	<5	<10	<5	<10	<20
	Q1	04/14/04	<2	2.3	92	<0.5	<1	1.4	<1	9.5	<1	<0.0002	27	4.7	36	<1	<1	2	<20
	Q2	06/10/04	<2	5.4	170	<0.5	<1	3.1	1.6	5.8	<1	<0.0002	5.3	9.4	94	<1	<1	<1	<20
	Q3	09/13/04	<2	5.6	180	<0.5	<1	4.5	1.4	4.4	<1	<0.0002	2.5	3.7	67	<1	<1	<1	<20
	Q4	12/14/04	<2	11	180	<0.5	<1	6.5	1.1	2.8	<1	<0.0002	11	4.2	64	<1	<1	<1	<20
	Q4 Dup	12/14/04	<2	12	170	<0.5	<1	5.9	<1	2.8	<1	<0.0002	10	3.9	63	<1	<1	<1	<20
MW15	PNL	06/14/02	<20	<25	110	<8	<10	<10	<20	<20	<25	<0.0002	<40	<20	<10	<20	<20	<20	<40
	PNL Dup	06/14/02	<20	<25	100	<8	<10	<10	<20	<20	<25	<0.0002	<40	<20	<10	<20	<20	<20	<40
	Q1	04/15/04	<2	<1	140	<0.5	<1	2	1.7	9.4	<1	<0.0002	18	<1	43	<1	<1	<1	<20
	Q2	06/10/04	<2	<1	140	<0.5	<1	1.3	2.2	5.5	<1	<0.0002	2.3	4.6	73	<1	<1	<1	<20
	Q3	09/14/04	<6	<3	140 J+	<1.5	<3	14	<3	<6	<3	<0.0002	<3	7.6	33	<3	<3	<3	<60 J
	Q4	12/14/04	<2	<1	140	<0.5	<1	2.1	1.7	5.2	<1	<0.0002	27	6.5	58	<1	<1	<1	<20
MW16	PNL	08/09/02	<20	<25	120	<8	<10	<10	<20	<20	<5	<0.0002	<40	<20	<10	<20	<10	<20	<40
	Q1	03/16/04	<2	<1	80	<0.5	<1	<1	1.7	6.5	<1	<0.0002	2.7	<1	19	<1	<1	<1	<20
	Q2	06/08/04	<2	1	23	<0.5	<1	<1	2.2	14	<1	<0.0002	9.7	4.7	8.6	<1	<1	<1	<20
	Q3	09/08/04	<2	<1	8.6	<0.5	<1	<1	1.3	11	<1	<0.0002	4.5	3.1	3.8	<1	<1	<1	<20
	Q4	12/11/04	<2	<1	6.2	<0.5	<1	<1	1.4	22	5.3	<0.0002	28	12	5.3	<1	<1	<1	21

Table 3.3-5
Metal Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
MW17	PNL	08/09/02	<20	<25	170	<8	<10	<10	<20	<20	<5	<0.0002	<40	<20	<10	<20	<10	<20	<40
	Q1	03/16/04	<2	<1	150	<0.5	<1	<1	1.9	2.7	<1	<0.0002	<1	<1	30	<1	<1	<1	<20
	Q2	06/08/04	<2	<1	140	<0.5	<1	<1	2.2	3.3	<1	<0.0002	<1	<1	33	<1	<1	<1	<20
	Q2 Dup	06/08/04	<2	<1	140	<0.5	<1	<1	2.1	3.2	<1	<0.0002	<1	<1	33	<1	<1	<1	<20
	Q3	09/08/04	<2	<3	160	<0.5	<1	<1	1.6	2	<1	<0.0002	<1	3.4	17 J-	<1	<1	<3	<20
MW17	Q4	12/11/04	<2	<1	180	<0.5	<1	<1	1.3	13	4.7	<0.0002	<1	<1	34	<1	<1	<1	32
MW18	PNL	08/09/02	<10	<25	64	<4	<5	<5	<10	<10	<5	<0.0002	<20	<10	<5	<10	<5	<10	<20
	Q1	04/12/04	<2	1.2	46	<0.5	<1	<1	<1	5.9	<1	<0.0002	1.5	<1	14	<1	<1	1.2	<20
	Q2	06/09/04	<2	2.9	28	<0.5	<1	<1	<1	3.8	<1	<0.0002	8	<1	13	<1	<1	<1	<20
	Q3	09/09/04	<2	2.9	24	<0.5	<1	1.1	<1	2.1	<1	<0.0002	9.5	1.3	9.7	<1	<1	<1	<20
	Q4	12/13/04	<2	2	65	<0.5	<1	<1	<1	3.5	<1	<0.0002	2.4	1.9	19	<1	<1	<1	21
MW19	Q1	04/13/04	<2	5.9	44	<0.5	<1	<1	1.1	3.7	<1	<0.0002	13	1	13	<1	<1	1.4	<20
	Q2	06/09/04	<2	7.3	46	<0.5	<1	1	1.8	3.4	<1	<0.0002	16	<1	13	<1	<1	1.6	<20
	Q3	09/09/04	<2	7.1	26	<0.5	<1	1.1	<1	<2	<1	<0.0002	12	<1	6.7	<1	<1	<1	<20
	Q3 Dup	09/09/04	<2	5.5	30	<0.5	<1	1.1	<1	<2	<1	<0.0002	11	<1	7.3	<1	<1	<1	<20
	Q4	12/13/04	<2	8.8	49	<0.5	<1	2.2	1.3	18	6.6	<0.0002	10	2.4	8.5	<1	<1	5.4	24
MW20	Q1	04/13/04	<2	<1	1700	<0.5	<1	<1	1.4	2.2	<1	<0.0002	1	<1	20	<1	<1	<1	<20
	Q2	06/09/04	<2	<1	1800	<0.5	<1	<1	1.4	2.2	<1	<0.0002	<1	<1	19	<1	<1	<1	<20
	Q3	09/16/04	<6	<3	2000 J+	<1.5	<3	<3	<3	<6	<3	<0.0002	<3	4.4	21	<3	<3	<3	<60
	Q4	12/13/04	<2	<1	1900	<0.5	<1	<1	1.2	<2	<1	<0.0002	<1	2.8	25	<1	<1	<1	<20
NMW1	PNL	06/14/02	<10	<25	76	<4	<5	<5	<10	<10	<25	<0.0002	46	14	<5	<10	<5	<10	31
	Q3	09/15/04	<6	<3	18	<1.5	<3	<3	<3	7.8	<3	<0.0002	<3	4.6	59	<3	<3	<3	<60
	Q4	12/15/04	<4	<2	160	<1	<2	<2	<2	4.8	<2	<0.0002	<2	<2	96	<2 J-	<2	<2	<40
NMW2	PNL	06/14/02	<30	<25	97	<12	<15	<15	<30	<30	<25	<0.0002	<60	<30	<15	<30	<30	<30	<60
	Q1	04/16/04	<2	3.4	140	<0.5	<1	1.6	2.8	12	<1	<0.0002	13	<1	83	<1	<1	<1	<20
	Q2	06/12/04	<2	2.3	110	<0.5	<1	<1	2.5	5.2	<1	<0.0002	12	<1	120	<1	<1	<1	<20
	Q3	09/14/04	<6	7.4	130	<1.5	<3	<3	<3	7.1	<3	<0.0002	11	<3	72	<3	<3	<3	<60
	Q4	12/16/04	<8	<4	150	<2	<4	<4	<4	<8	<4	<0.0002	9.6	<4	82	28	<4	<4	<80
MCL			6	10	1000	4	5	50	--	1300	15	0.002	--	100	50	100	--	--	5000

ug/l: micrograms per liter
mg/l: milligrams per liter
Dup: Duplicate
MCL: Applicable Maxiumum Contaminant Levels for drinking water.
The levels cited for lead and copper are regulatory action levels.
: Shade areas indicate concentration detected above MCL.
J: estimated
J+: estimated with a high bias
J-: estimated with a low bias

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-6
Emergent Compound Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,4-Dioxane	Chromium VI	N-Nitrosodimethylamine (NDMA)	Perchlorate
			ug/l	mg/l	ug/l	ug/l
AW1	Q1	04/22/04	<0.5	<0.002 R	<0.002	<2
	Q2	06/11/04	---	<0.02 R	---	---
	Q3	09/14/04	<0.5	---	---	---
	Q4	12/15/04	<0.5	---	---	---
AW1A	Q1	04/15/04	---	<0.002 R	---	---
	Q2	06/11/04	---	<0.02	---	---
AW-2	PNL	06/14/02	---	---	---	---
AW3	PNL	06/15/02	---	<0.001	---	---
	Q1	04/14/04	---	<0.002	---	<2
	Q1 Dup	04/14/04	---	<0.002	---	<2
AW-4	PNL	06/15/02	---	<0.001	---	---
AW4A	Q1	04/16/04	<0.5	<0.002 R	<0.002	<20
	Q2	06/16/04	---	<0.02 R	---	---
	Q3	09/15/04	0.61	---	---	---
	Q4	12/17/04	<0.5	---	---	---
AW5	PNL	06/15/02	---	<0.001	---	---
	Q1	04/19/04	---	<0.002 R	---	---
	Q2	06/14/04	---	<0.02 R	---	---
B4A	Q1	04/19/04	1.3	<0.002	<0.002	<20
	Q1 Dup	04/19/04	1	<0.002	<0.002	<10
	Q2	06/17/04	2	---	---	---
	Q2 Dup	06/17/04	1.7	---	---	---
	Q3	09/15/04	2.4	---	---	---
	Q4	12/20/04	1.3	---	---	---
	Q4 Dup	12/20/04	1.3	---	---	---
B7	PNL	06/15/02	---	<0.001	---	---
	Q1	04/19/04	1.8	<0.002	<0.002	<20
	Q2	07/02/04	2.1	---	---	---
	Q3	09/17/04	2.3	---	---	---
	Q3 Dup	09/17/04	2.1	---	---	---
	Q4	12/20/04	1.8	---	---	---
GP01	Q1	04/20/04	3.4	<0.002	<0.002	<20
	Q2	06/17/04	3.5	<0.02 R	---	---
	Q3	09/17/04	2.9	---	---	---
	Q4	12/17/04	2.5	---	---	---
GP12	Q1	04/21/04	---	<0.002	---	---
GP23	Q1	04/22/04	---	<0.002	---	---
GP24	Q1	04/20/04	---	<0.002	---	---
MW04	PNL	06/14/02	---	<0.001	---	---
	PNL	06/14/02	---	<0.001	---	---
	Q1	04/14/04	<0.5	<0.002 J-	<0.002	<2
	Q3	09/13/04	<0.5	---	---	---
	Q4	12/13/04	<0.5	---	---	---
MW09	PNL	06/14/02	---	<0.001	---	---
	Q1	04/15/04	---	<0.002	---	---

Table 3.3-6
Emergent Compound Concentrations in Groundwater
Ascon Landfill Site

Site Location	Event	Sample Date	1,4-Dioxane	Chromium VI	N-Nitrosodimethylamine (NDMA)	Perchlorate
			ug/l	mg/l	ug/l	ug/l
MW13	PNL	06/14/02	---	<0.001	---	---
	Q1	04/14/04	<0.5	<0.002	<0.002	<2
	Q3	09/13/04	0.72	---	---	---
	Q4	12/14/04	<0.5	---	---	---
	Q4 Dup	12/14/04	<0.5	---	---	---
MW15	PNL	06/14/02	---	<0.001	---	---
	PNL	06/14/02	---	<0.001	---	---
	Q1	04/15/04	---	<0.002	---	---
MW16	PNL	08/09/02	---	<0.001	---	---
	Q1	03/16/04	<0.5	<0.002	<0.002	<2
	Q3	09/08/04	<0.5	---	---	---
	Q4	12/11/04	<0.5	---	---	---
MW17	PNL	08/09/02	---	<0.001	---	---
	Q1	03/16/04	<0.5	<0.002	0.0021 J	<2
	Q2	06/08/04	---	---	<0.002	---
	Q2 Dup	06/08/04	---	---	<0.002	---
	Q3	09/08/04	<0.5	---	---	---
	Q4	12/11/04	<0.5	---	---	---
MW18	PNL	8/)9/02	---	<0.001	---	---
	Q1	04/12/04	<0.5	<0.002	<0.002	<2
	Q3	09/09/04	<0.5	---	---	---
	Q4	12/13/04	<0.5	---	---	---
MW19	Q1	04/13/04	<0.5	<0.002 R	<0.002	<2
	Q2	06/09/04	---	<0.002 R	---	---
	Q3	09/09/04	<0.5	---	---	---
	Q3 Dup	09/09/04	<0.5	---	---	---
	Q4	12/13/04	<0.5	---	---	---
MW20	Q1	04/13/04	---	<0.002	---	<2
NMW1	PNL	06/14/02	---	<0.001	---	---
NMW2	PNL	06/14/02	---	<0.001	---	---
	Q1	04/16/04	---	<0.002	---	---

ug/l: mictograms per liter
Dup: Duplicate
---: Not analyzed
R: rejected
J: estimated
J+: estimated with a high bias
J-: estimated with a low bias

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-7
Total Petroleum Hydrocarbons in Groundwater
June-August 2002
Ascon Landfill Site

Sample Location	Sampling Date	TPH (EPA Method 8015M)
		mg/l
AW-2	6/14/2002	<0.05
AW-3	6/15/2002	<0.05
AW-4	6/15/2002	<0.05
AW-5	6/15/2002	<0.05
B-4	6/14/2002	0.65
B-6	6/15/2002	<0.05
B-7	6/15/2002	<0.25
MW-4	6/14/2002	<0.05
MW-4 (dup.)	6/14/2002	<0.05
MW-9	6/14/2002	<0.05
MW-13	6/14/2002	<0.05
MW-15	6/14/2002	<0.05
MW-15 (dup.)	6/14/2002	<0.05
MW-16	8/9/2002	<0.05
MW-17	8/9/2002	<0.05
MW-18	8/9/2002	<0.05
NMW-1	6/14/2002	<0.05
NMW-2	6/14/2002	<0.05

mg/L - Milligrams per Liter

Table 3.3-8
Hydrocarbon Range Composition of NAPL
Ascon Landfill Site

Sample Location	Gasoline Range	Heavy Gasoline Range	Kerosene Range	Diesel Range	Fuel Oils, Lube Oils, Bunker Fuel Ranges		
	C3 to C8	C8 to C9	C9 to C11	C11 to C20	C20 to C25	C25 to C28	C29 to C34
P-1	10.3	10.0	14.9	44.8	7.1	5.3	7.6
P-5	2.5	6.7	14.0	51.8	7.6	6.7	10.7
P-6	5.4	7.2	13.9	45.4	7.1	8.4	12.6
P-8	7.2	7.2	13.6	55.7	5.5	4.3	8.6

All values reported as percentages.
All samples collected December 2004.

Table 3.3-9

NAPL Specific Gravity and Viscosity by ASTM D445, API RP40

Ascon Landfill Site

NAPL Sample Location	Temperature	Specific Gravity	Density	Viscosity	
	Deg. F		g/cc	centistokes	centipoise
P-1	70	0.9515	0.9496	776	737
	100	0.9469	0.9404	219	206
	130	0.9454	0.9322	86.4	80.5
P-5	70	0.9683	0.9664	4111	3973
	100	0.9652	0.9585	923	885
	130	0.9625	0.9490	265	251
P-6	70	0.9842	0.9822	12463	12241
	100	0.9835	0.9767	6968	6806
	130	0.9824	0.9686	1473	1427
P-8	70	0.9434	0.9415	453	426
	100	0.9396	0.9331	143	133
	130	0.9356	0.9225	59.0	54.4

All samples collected December 2004.

Table 3.3-10

Interfacial/Surface Tension of NAPL with Water and Air by ASTM D971

Ascon Landfill Site

Phase Pair		Temperature	Interfacial Tension
NAPL Sample Location	Phase	Deg. F	dynes/centimeter
P-I	Air	70	31.2
	Tap Water	70	28.2
P-5	Air	70	32.9
	Tap Water	70	25.8
P-6	Air	70	32.9
	Tap Water	70	34.5
P-8	Air	70	30.9
	Tap Water	70	16.3
Tap Water	Air	70	71.8

All samples collected December 2004.

Table 3.3-11

Metal Concentrations and pH Results in NAPL
Ascon Landfill Site

Site Location	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
P1	12/09/04	<5	<1.0	<0.5	<0.5	<1	<1.0	<1.0	<0.5	<1	<0.1	<1.0	7.3	<5.0	<1	<5.0	4.6	<1.0	5.2
P4	12/09/04	<5	4.2	5.7	<0.5	<1	4.3	<1.0	<0.5	2.9	<0.1	<1.0	31	<5.0	<1	<5.0	20	2	6.6
P5	12/09/04	<5	2.9	6.3	<0.5	<1	2.2	<1.0	<0.5	2.5	<0.1	<1.0	34	<5.0	<1	<5.0	24	1.2	5.5
P6	12/09/04	<5	<1	10	<0.5	<1	1.1	<1.0	<0.5	<1	<0.1	<1.0	31	<5.0	<1	<5.0	15	1.8	7.0
P8	12/09/04	<5	1.3	2.3	<0.5	<1	2	<1.0	<0.5	5	<0.1	<1.0	19	<5.0	<1	<5.0	16	<1.0	5.1

mg/kg: milligrams per kilogram
All samples collected December 2004.

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.3-12
Detected VOCs in NAPL
Ascon Landfill Site

Site Location	Sample Date	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Ethyl-benzene	Isopropyl-benzene	Xylenes	Naphthalene	n-Propyl-benzene	sec-Butyl-benzene	n-Butyl-benzene	4-Isopropyl-toluene	Toluene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
P1	12/09/04	690	<8.0	180	94	570	280	150	74	98	140	58
P4	12/09/04	21	6.1	10	7.9	7.5	80	11	9.4	10	9.2	<4.0
P5	12/09/04	100	24	12	25	33	240	39	24	32	25	<4.0
P6	12/09/04	79	20	13	14	24	93	23	18	31	28	<8.0
P8	12/09/04	610	170	120	63	580	360	110	67	110	100	<40.0

mg/kg: milligrams per kilogram
Only detected analytes shown.
All samples collected December 2004.

Source: Groundwater Remedial Investigation, Revision 1.0 (Geosyntec, 2007b)

Table 3.4-1
Daily Summary of Perimeter Air Results and Findings
Ascon Landfill Site

Date	Phase[1]	Site Activities	Detection Summary	Wind Rose Diagram	Findings
May 17, 2004	III	FLA trenching: PNL-TP01	Table N-1	Figure N-1	Wind direction ranged from the south and the west-southwest. Given this wind direction, sampling location AA-07 could be considered upwind of the Site. With the exception of toluene at AA-01, concentrations of detected analytes from location AA-07 are similar to those detected at remaining locations. Given the wind direction during this event, the AA-01 location ranged from partially upwind to cross-gradient of the site.
May 18, 2004	III	FLA trenching: PNL-TP05 and PNL-TP06	Table N-2	Figure N-2	Wind direction ranged from the south to the west such that location AA-07 is considered to be an upwind or background sampling location. Data collected from the background sampling location appears similar to that collected from the remainder of the locations.
May 19, 2004	III	FLA trenching: PNL-TP02 and PNL-TP04	Table N-3	Figure N-3	Wind direction ranged from south to the south-southwest. Therefore, location AA-07 could be considered a background sampling location. Analyte concentrations detected at locations AA-01 through AA-05 were generally similar to concentrations detected in the background sample location AA-07.
May 20, 2004	III	FLA trenching: PNL-TP03 and PNL-TP07	Table N-4	Figure N-4	Wind direction ranged from south to the south-southwest. Location AA-07 can be considered an upwind or background sampling location. With the exception of acetone at locations AA-02 and AA-03, concentrations of detected analytes at locations AA-01 through AA-05 were generally similar to those detected at location AA-07.
May 24, 2004	IV	Lagoon trenching: PNL-L5A PNL-L4A/B	Table N-5	Figure N-5	Wind direction ranged from the south to the south-southwest where AA-07 is an upwind or background sampling location. Data collected from the background sampling location appears similar to that collected from the remainder of the locations.
May 25, 2004	IV	Lagoon trenching: PNL-L5B PNL-L3A/B	Table N-6	Figure N-6	wind direction on 25 May 2004 ranged from the south-southeast to the south-southwest. Again location AA-07 is considered to be an upwind or background sampling location. Results from sampling locations AA-01 through AA-05 do not appear significantly different than those from the background location with the exception of acetone at location AA-02.
May 26, 2004	IV	Lagoon trenching: PNL-L1A/B PNL-L2A/B	Table N-7	Figure N-7	Wind direction ranged from the south-southeast to the west where again location AA-07 is considered to be an upwind or background sampling location. With the exception of vinyl acetate at location AA-02 and acetone at AA-01 and AA-02, concentrations of detected analytes at locations AA-01 through AA-05 were similar to those detected at location AA-07.

Table 3.4-1
Daily Summary of Perimeter Air Results and Findings
Ascon Landfill Site

Date	Phase[1]	Site Activities	Detection Summary	Wind Rose Diagram	Findings
June 28, 2004	VIII	Pit F area drilling: PNL-F04, -F05, -F06, -F07	Table N-8	Figure N-8	During Phase VIII Pit F sampling, ambient air sampling location AA-04 was moved approximately 200 feet south and renamed AA-04A. Detected analytes are generally similar to those detected during both test trench excavation and lagoon sampling activities. Wind direction ranged from the south-southeast to the south-southwest. AA-07 is considered to be an upwind or background sampling location. Data collected from the background sampling location appears similar to that collected from the remainder of the locations.
June 29, 2004	VIII	Pit F area drilling: PNL-F03, -F11, -F17, -F18, -F21, -F27	Table N-9	Figure N-9	Wind direction ranged from the south to the south-southwest such that location AA-07 can again be considered to be an upwind or background sampling location. Concentrations of analytes detected in samples collected from locations AA-01 through AA-05 were very similar to those detected in the background sample.
June 30, 2004	VIII	Pit F area drilling: PNL-F01, -F12, -F19, Pit F sampling	Table N-10	Figure N-10	Wind direction ranged from the south to the southwest. Again, location AA-07 is considered to be an upwind or background sampling location. Several constituents, specifically chlorinated VOCs, were detected. In addition, concentrations of detected analytes from sample AA-03 are greater than the background location and other site locations. A review of laboratory QA/QC information for sample AA-03 identified that the ambient air sample was mistakenly collected in a source SUMMA canister. Source canisters are typically reserved for impacted samples, where ambient air samples typically contain much lower concentrations of constituents. It was also discovered that the use of this particular SUMMA canister just prior to use at Ascon did involve the sampling of chlorinated VOCs. Although the SUMMA canister was cleaned at the laboratory between uses and the batch passed QC, it is suspected that the chlorinated VOCs may be a result of the past use of the canister and residual contamination. This suspicion is bolstered by the fact that a highly anomalous detection of PCE (13,000 ug/m3) was found during Phase VIII surface flux testing, an anomaly that was not replicated under controlled conditions (see Table 13 of Attachment 1 or Appendix F).

Table 3.4-1
Daily Summary of Perimeter Air Results and Findings
Ascon Landfill Site

Date	Phase[1]	Site Activities	Detection Summary	Wind Rose Diagram	Findings
July 1, 2004	VIII	Pit F area drilling: PNL-F22, -F25, -F26, -F28, -F30	Table N-11	Figure N-11	Wind direction generally ranged from the southwest to the west. For an approximate one hour period in the morning from 8 to 9 am, wind direction was from the north. Given that site activities were being conducted on the eastern side of the site, location AA-07 can be considered to be an upwind or background sampling location for this event. With the exception of acetone at AA-01, concentrations of detected analytes at locations AA-01 through AA-05 were generally similar to concentrations detected at location AA-07. However, given the wind direction during this sampling event, AA-01 could also be considered predominately upwind of the Site.

When evaluating differences in concentrations of analytes between monitoring locations, concentrations with differences of less than approximately 5 ug/m^3 were considered similar

FLA = Former Lagoon Area

[1] Phase of Pilot Study No. 3

Table 3.4-2
Summary of Laboratory Data
Perimeter Air Samples 12 July 2005 - 13 January 2006 during Emergency Action
Ascon Landfill Site

Analyte	Sample Location														
	EA-AA-01					EA-AA-02					EA-AA-03				
	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)
1,1,2,2-Tetrachloroethane	-	-	-	-	-	<0.62	1	140	1	1%	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	<0.61	0.85	72	1	1%	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	<0.61	7	72	12	17%	<0.63	12	140	95	68%	<0.63	13	139	75	54%
1,3,5-Trimethylbenzene	<0.61	1.5	72	1	1%	<0.62	3.1	140	21	15%	<0.61	3.3	139	12	9%
1,3-Butadiene	-	-	-	-	-	<0.62	1.8	140	3	2%	<0.61	2.2	139	7	5%
1,4-Dichlorobenzene	-	-	-	-	-	<0.62	0.74	140	1	1%	-	-	-	-	-
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	<0.76	29	72	65	90%	<0.62	10	140	120	86%	<0.70	8.7	139	120	86%
2-Hexanone	<0.61	2.7	72	7	10%	<0.62	2.2	140	12	9%	<0.61	2.3	139	10	7%
4-Ethyltoluene	<0.61	1.2	72	1	1%	<0.62	3.3	140	28	20%	<0.61	3.3	139	17	12%
4-Methyl-2-pentanone	<0.61	9.4	72	2	3%	<0.62	1.3	140	1	1%	<0.61	1.1	139	1	1%
Acetone	7.6	730	72	67	93%	<0.76	66	140	111	79%	7	46	139	118	85%
alpha-Pinene	<0.61	450	72	3	4%	<0.62	3.8	140	16	11%	<0.61	3.4	139	17	12%
Benzene	<0.61	2.6	72	14	19%	<0.62	7.8	140	71	51%	<0.63	9.9	139	75	54%
Bromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	<0.61	7.5	72	3	4%	<0.62	4.8	140	10	7%	<0.61	14	139	10	7%
Carbon Tetrachloride	-	-	-	-	-	<0.62	1.5	140	1	1%	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	0.69	1.5	72	57	79%	0.69	1.5	140	113	81%	<0.73	1.5	139	116	83%
cis-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	<0.61	1.1	139	1	1%
Cumene	<0.61	380	72	1	1%	<0.62	2.6	140	7	5%	<0.61	4.5	139	1	1%
d-Limonene	<0.61	1.6	72	5	7%	<0.62	4.5	140	22	16%	<0.61	10	139	19	14%
Ethylbenzene	<0.61	1.9	72	6	8%	<0.62	6.8	140	66	47%	0.62	6.9	139	54	39%
m,p-Xylenes	<1.2	7.3	72	14	19%	<1.3	14	140	90	64%	<1.3	30	139	74	53%
Methyl tert-Butyl Ether	-	-	-	-	-	-	-	-	-	-	<0.61	1.8	139	1	1%
Methylene chloride	<0.65	7.8	72	36	50%	<0.62	4.1	140	60	43%	<0.61	3.7	139	48	35%
Naphthalene	<0.61	23	72	4	6%	<0.62	10	140	30	21%	<0.61	3.9	139	8	6%
n-Hexane	<0.63	4.8	72	23	32%	<0.63	9.9	140	106	76%	<0.63	14	139	80	58%
n-Nonane	<0.61	0.85	72	3	4%	<0.63	14	140	71	51%	0.62	3.9	139	43	31%
o-Xylene	<0.61	2.6	72	10	14%	<0.63	5.3	140	79	56%	<0.63	12	139	64	46%
Styrene	<0.61	0.99	72	4	6%	<0.62	160	140	25	18%	<0.61	3	139	24	17%
Tetrachloroethene	<0.65	3.3	72	15	21%	<0.62	2.8	140	28	20%	<0.61	4.5	139	27	19%
Toluene	<0.76	29	72	64	89%	<0.63	19	140	133	95%	<0.63	33	139	120	86%
Trichloroethene	<0.61	1.1	72	1	1%	<0.62	1.1	140	2	1%	<0.61	33	139	3	2%
Trichlorofluoromethane	0.94	2.1	72	72	100%	0.95	2.1	140	138	99%	0.93	2.2	139	137	99%
Trichlorotrifluoroethane	<0.61	0.94	72	3	4%	<0.62	4.9	140	9	6%	<0.61	4.1	139	11	8%
Vinyl Acetate	<0.73	20	72	23	32%	<0.71	8.5	140	10	7%	<0.71	8.4	139	21	15%

Notes:

Dash (-) indicates no detection at sample location

For maximum the maximum detected value is reported.

For minimum the lower of either the minimum detected value or minimum reported limit presented.

Table 3.4-2
Summary of Laboratory Data
Perimeter Air Samples 12 July 2005 - 13 January 2006 during Emergency Action
Ascon Landfill Site

Analyte	Sample Location														
	EA-AA-04					EA-AA-05					EA-AA-06				
	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	<0.61	3.5	130	1	1%	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	<0.61	4.2	130	57	44%	<0.62	2.4	86	13	15%	<0.63	4.4	140	46	33%
1,3,5-Trimethylbenzene	<0.61	1.2	130	7	5%	-	-	-	-	-	<0.63	1.2	140	6	4%
1,3-Butadiene	<0.61	1.3	130	3	2%	-	-	-	-	-	<0.63	1.1	140	3	2%
1,4-Dichlorobenzene	<0.61	0.86	130	1	1%	-	-	-	-	-	<0.63	0.89	140	3	2%
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	<0.63	11	130	114	88%	<0.69	8.1	86	73	85%	<0.74	38	140	126	90%
2-Hexanone	<0.61	2.8	130	7	5%	<0.62	2.1	86	6	7%	<0.63	2.4	140	8	6%
4-Ethyltoluene	<0.61	1.4	130	10	8%	-	-	-	-	-	<0.63	1.5	140	12	9%
4-Methyl-2-pentanone	<0.61	1.3	130	2	2%	<0.62	1.2	86	3	3%	<0.63	1.8	140	5	4%
Acetone	<0.85	42	130	111	85%	<0.76	61	86	71	83%	7.4	260	140	112	80%
alpha-Pinene	<0.61	7.2	130	20	15%	<0.63	53	86	6	7%	<0.63	8.5	140	17	12%
Benzene	<0.61	5	130	61	47%	0.62	2.7	86	15	17%	<0.63	5	140	56	40%
Bromomethane	-	-	-	-	-	-	-	-	-	-	<0.63	0.74	140	1	1%
Carbon Disulfide	<0.61	1.4	130	3	2%	<0.62	1.1	86	1	1%	<0.63	19	140	7	5%
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	<0.62	3	86	1	1%	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	<0.63	1.4	140	1	1%
Chloromethane	0.69	1.6	130	109	84%	<0.71	1.6	86	60	70%	<0.76	2.3	140	113	81%
cis-1,2-Dichloroethene	-	-	-	-	-	<0.62	2	86	1	1%	-	-	-	-	-
Cumene	<0.61	23	130	2	2%	<0.63	58	86	2	2%	<0.63	2.5	140	1	1%
d-Limonene	<0.61	72	130	23	18%	<0.63	110	86	8	9%	<0.63	12	140	21	15%
Ethylbenzene	<0.61	3.4	130	46	35%	<0.62	2	86	7	8%	<0.63	3.5	140	40	29%
m,p-Xylenes	<1.2	14	130	59	45%	<1.2	8.9	86	18	21%	<1.3	14	140	57	41%
Methyl tert-Butyl Ether	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	<0.61	4.1	130	45	35%	<0.62	2.5	86	8	9%	<0.64	4	140	52	37%
Naphthalene	<0.61	1.7	130	5	4%	<0.62	4.1	86	6	7%	<0.65	2.2	140	6	4%
n-Hexane	<0.61	4.8	130	70	54%	<0.62	8.3	86	24	28%	<0.64	4.9	140	65	46%
n-Nonane	<0.61	3.1	130	22	17%	<0.62	1.1	86	3	3%	<0.63	1.9	140	18	13%
o-Xylene	<0.61	4.8	130	51	39%	<0.62	3.2	86	9	10%	<0.63	4.9	140	50	36%
Styrene	<0.61	26	129	22	17%	<0.62	1.3	86	4	5%	<0.63	3.3	140	18	13%
Tetrachloroethene	<0.61	3.4	130	29	22%	<0.62	5.7	86	9	10%	<0.63	3.4	140	29	21%
Toluene	<0.63	20	130	101	78%	<0.63	11	86	53	62%	<0.65	23	140	96	69%
Trichloroethene	<0.61	4.7	130	6	5%	<0.62	1.2	86	2	2%	<0.63	35	140	8	6%
Trichlorofluoromethane	0.84	5.3	130	128	98%	0.93	3.3	86	86	100%	0.92	2.1	140	138	99%
Trichlorotrifluoroethane	<0.61	0.87	130	2	2%	<0.63	3.4	86	9	10%	<0.63	2.9	140	7	5%
Vinyl Acetate	<0.72	14	130	29	22%	<0.76	21	86	21	24%	<0.74	33	140	24	17%

Notes:

Dash (-) indicates no detection at sample location

For maximum the maximum detected value is reported.

For minimum the lower of either the minimum detected value or minimum reported limit presented.

Table 3.4-2
Summary of Laboratory Data
Perimeter Air Samples 12 July 2005 - 13 January 2006 during Emergency Action
Ascon Landfill Site

Analyte	Sample Location				
	EA-AA-07				
	Minimum (µg/m3)	Maximum (µg/m3)	Number analyzed	Number detected	Frequency of detection (%)
1,1,2,2-Tetrachloroethane	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-
1,2,4-Trimethylbenzene	<0.69	3.2	73	6	8%
1,3,5-Trimethylbenzene	-	-	-	-	-
1,3-Butadiene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
1,4-Dioxane	<0.69	0.96	73	1	1%
2-Butanone (MEK)	<0.74	12	73	63	86%
2-Hexanone	<0.69	3.5	73	8	11%
4-Ethyltoluene	<0.69	0.75	73	1	1%
4-Methyl-2-pentanone	<0.69	2.1	73	8	11%
Acetone	<0.89	55	73	62	85%
alpha-Pinene	<0.69	1.2	73	1	1%
Benzene	<0.69	2.7	73	14	19%
Bromomethane	-	-	-	-	-
Carbon Disulfide	<0.69	1.3	73	1	1%
Carbon Tetrachloride	-	-	-	-	-
Chloroethane	-	-	-	-	-
Chloroform	-	-	-	-	-
Chloromethane	<0.69	1.2	73	53	73%
cis-1,2-Dichloroethene	-	-	-	-	-
Cumene	-	-	-	-	-
d-Limonene	<0.69	1.1	73	4	5%
Ethylbenzene	<0.69	2	73	3	4%
m,p-Xylenes	<1.4	7.5	73	17	23%
Methyl tert-Butyl Ether	-	-	-	-	-
Methylene chloride	<0.69	1.4	73	5	7%
Naphthalene	<0.69	1.9	73	5	7%
n-Hexane	<0.69	6.5	73	18	25%
n-Nonane	<0.69	1.5	73	5	7%
o-Xylene	<0.69	2.7	73	7	10%
Styrene	<0.69	1.1	73	4	5%
Tetrachloroethene	<0.69	1.4	73	2	3%
Toluene	<0.69	11	73	38	52%
Trichloroethene	<0.69	100	73	3	4%
Trichlorofluoromethane	0.9	1.8	73	71	97%
Trichlorotrifluoroethane	<0.69	0.86	73	3	4%
Vinyl Acetate	<0.77	9.4	73	19	26%

Notes:

Dash (-) indicates no detection at sample location

For maximum the maximum detected value is reported.

For minimum the lower of either the minimum detected value or minimum reported limit presented.

Table 4.4-1
Chemicals of Potential Concern
Ascon Landfill Site

Soils and Waste

VOCs	1,1,1-Trichloroethane	**SVOCs**	1-Methylnaphthalene
	1,2,4-Trimethylbenzene		2-Methylnaphthalene
	1,2-Dichloroethane		2,4-Dichlorophenol
	1,3-Butadiene		2,4-Dimethylphenol
	Acetone		2,4,6-Trichlorophenol
	Benzene		Benzidine
	Chlorobenzene		Benzo(a)pyrene
	Chloroform		Bis 2-ethylhexylphthalate
	Ethylbenzene		Di-n-butyl phthalate
	Freon 11 (TCFM)		Dibenzofuran
	n-Hexane		Fluoranthene
	Methylene Chloride		Indeno(1,2,3-cd)pyrene
	Naphthalene		Phenanthrene
	Styrene		Phenol
	Toluene		Pyrene
Inorganics	Antimony	**Pesticides/**	Aldrin
	Arsenic	**PCBs**	Aroclor 1248
	Barium		Aroclor 1260
	Cadmium		Endosulfan II
	Copper		
	Lead		
	Mercury		
	Nickel		
	Silver		
	Thallium		
	Vanadium		
	Zinc		

Groundwater

VOCs	1,2,4-Trimethylbenzene
	1,3,5-Trimethylbenzene
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene
	Benzene
	n-Butylbenzene
	sec-Butylbenzene
	Chlorobenzene
	Chloromethane
	Ethylbenzene
	Isopropylbenzene
	Isopropyltoluene
	Naphthalene
	n-Propylbenzene
	Toluene
	Xylenes

Table 4.5-1
Summary of Risk-Based Concentrations for Soil
Ascon Landfill Site

Chemical	Construction		Commercial				Residential				Recreational				
											Adult/Child			Adult Concession	
	Ingestion, Dermal, Outdoor Air Inhalation		Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Outdoor Air Inhalation		Indoor Air Pathway	Indoor Air Pathway	Maximum Detection*
	Risk or Hazard	0 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	4 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	
VOCs															
1,1,1-Trichloroethane	1.0	**10,000**	1.0	**2,200**	**26,000**	**570**	1.0	**530**	**5,700**	**17**	1.0	**93,000**	**1,800**	**1,100**	0.2
1,2,4-Trimethylbenzene	1.0	**550**	1.0	**120**	**340**	**3.4**	1.0	**29**	**83**	**0.17**	1.0	**930**	**18**	**6.6**	80
1,2-Dichloroethane	1E-05	**610**	1E-05	**5.2**	**33**	**0.77**	1E-06	**0.20**	**1.3**	**0.009**	1E-06	**17**	**0.99**	**1.5**	10
1,3-Butadiene	1E-05	**17**	1E-05	**0.15**	**3.2**	**0.10**	1E-06	**0.01**	**0.10**	**0.001**	1E-06	**4.2**	**0.12**	**0.18**	ND
Acetone	1.0	**170,000**	1.0	**37,000**	**98,000**	**1,800**	1.0	**8,400**	**20,000**	**100**	1.0	**340,000**	**10,000**	**3,500**	26
Benzene	1E-05	**300**	1E-05	**2.6**	**24**	**0.55**	1E-06	**0.10**	**0.95**	**0.007**	1E-06	**13**	**0.72**	**1.1**	3.1
Chlorobenzene	1.0	**17,000**	1.0	**4,100**	**8,500**	**570**	1.0	**690**	**1,100**	**17**	1.0	**81,000**	**1,800**	**1,100**	6.6
Chloroform	1E-05	**1,500**	1E-05	**13.0**	**110**	**3.0**	1E-06	**0.51**	**4.5**	**0.037**	1E-06	**68**	**3.9**	**5.8**	25
Ethylbenzene	1.0	**40,000**	1.0	**9100**	**29,000**	**1,100**	1.0	**1,900**	**4,300**	**34**	1.0	**160,000**	**3,600**	**2,200**	11
Freon 11 (TCFM)	1.0	**4,100**	1.0	**870**	**25,000**	**400**	1.0	**220**	**5,900**	**12**	1.0	**95,000**	**1,200**	**770**	15
n-Hexane	1.0	**4,500**	1.0	**960**	**27,000**	**400**	1.0	**240**	**8,000**	**12**	1.0	**88,000**	**1,200**	**770**	ND
Methylene Chloride	1.0	**4,500**	1E-05	**66**	**490**	**16**	1E-06	**2.5**	**17**	**0.20**	1E-06	**380**	**21**	**31**	34
Naphthalene	1.0	**1,700**	1E-05	**35**	**230**	**3.4**	1E-06	**1.4**	**7.6**	**0.064**	1E-06	**83**	**6.7**	**6.5**	300
Styrene	1.0	**49,000**	1.0	**11,000**	**28,000**	**520**	1.0	**2,400**	**5,300**	**29**	1.0	**100,000**	**3,000**	**990**	3.3
Toluene	1.0	**5,400**	1.0	**1,200**	**6,800**	**170**	1.0	**280**	**1,500**	**5.1**	1.0	**24,000**	**530**	**330**	9.9

Table 4.5-1
Summary of Risk-Based Concentrations for Soil
Ascon Landfill Site

Chemical	Construction		Commercial				Residential				Recreational				
											Adult/Child			Adult Concession	
	Ingestion, Dermal, Outdoor Air Inhalation		Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Outdoor Air Inhalation		Indoor Air Pathway	Indoor Air Pathway	Maximum Detection*
	Risk or Hazard	0 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	4 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	
Inorganics															
Arsenic	1E-05	**180**	1E-05	**2.5**	--	--	1E-06	**0.06**	--	--	--	--	--	--	140
Antimony	1.0	**1,000**	1.0	**380**	--	--	1.0	**30**	--	--	--	--	--	--	8.5
Barium	1.0	**330,000**	1.0	**140,000**	--	--	1.0	**14,000**	--	--	--	--	--	--	3100
Cadmium	1.0	**2,400**	1.0	**970**	--	--	1.0	**77**	--	--	--	--	--	--	23
Copper	1.0	**100,000**	1.0	**38,000**	--	--	1.0	**3,000**	--	--	--	--	--	--	92
Lead	NA	**580**	NA	**800**	--		NA	**150**	--	--	--	--	--	--	2560
Mercury	1.0	**750**	1.0	**290**	--	--	1.0	**23**	--	--	--	--	--	--	37
Nickel	1.0	**34,000**	1.0	**14,000**	--	--	1.0	**1,400**	--	--	--	--	--	--	140
Silver	1.0	**13,000**	1.0	**4,800**	--	--	1.0	**380**	--	--	--	--	--	--	7.6
Thallium	1.0	**200**	1.0	**77**	--	--	1.0	**6.1**	--	--	--	--	--	--	72
Vanadium	1.0	**2,500**	1.0	**960**	--	--	1.0	**76**	--	--	--	--	--	--	75
Zinc	1.0	**750,000**	1.0	**290,000**	--	--	1.0	**23,000**	--	--	--	--	--	--	1740
Pesticides/PCBs															
Aldrin	1.0	**60**	1E-05	**1.0**	--	--	1E-06	**0.03**	--	--	--	--	--	--	0.05
Aroclor 1248	1.0	**36**	1E-05	**3.0**	--	--	1E-06	**0.09**	--	--	--	--	--	--	0.14
Aroclor 1260	1.0	**36**	1E-05	**3.0**	--	--	1E-06	**0.09**	--	--	--	--	--	--	9
Endosulfan II	1.0	**12,000**	1.0	**3,700**	--	--	1.0	**370**	--	--	--	--	--	--	0.071

Table 4.5-1
Summary of Risk-Based Concentrations for Soil
Ascon Landfill Site

Chemical	Construction		Commercial				Residential				Recreational				
											Adult/Child			Adult Concession	
	Ingestion, Dermal, Outdoor Air Inhalation		Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Ingestion, Dermal, Outdoor Air Inhalation			Indoor Air Pathway	Outdoor Air Inhalation		Indoor Air Pathway	Indoor Air Pathway	Maximum Detection*
	Risk or Hazard	0 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	0 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	Risk or Hazard	4 ft Cover RBC	4 ft Cover RBC	4 ft Cover RBC	
SVOCs															
1-Methylnaphthalene	1.0	**7,400**	1.0	**2,200**	--	--	1.0	**230**	--	--	--	--	--	--	65
2-Methylnaphthalene	1.0	**7,400**	1.0	**2,200**	--	--	1.0	**230**	--	--	--	--	--	--	100
2,4-Dichlorophenol	1.0	**6,000**	1.0	**1,800**	--	--	1.0	**180**	--	--	--	--	--	--	0.59
2,4-Dimethylphenol	1.0	**40,000**	1.0	**12,000**	--	--	1.0	**1,200**	--	--	--	--	--	--	39
2,4,6-Trichlorophenol	1.0	**200**	1.0	**62**	--	--	1.0	**6.1**	--	--	--	--	--	--	0.16
Benzidine	1E-05	**2.8**	1E-05	**0.03**	--	--	1E-06	**0.001**	--	--	--	--	--	--	260
Benzo(a)pyrene	1E-05	**110**	1E-05	**1.3**	--	--	1E-06	**0.04**	--	--	--	--	--	--	0.068
Bis 2-ethylhexylphthalate	1.0	**40,000**	1E-05	**5,700**	--	--	1E-06	**160**	--	--	--	--	--	--	460
Di-n-butyl phthalate	1.0	**200,000**	1.0	**62,000**	--	--	1.0	**6,100**	--	--	--	--	--	--	3.7
Dibenzofuran - SVOC	1.0	**4,000**	1.0	**1,200**	--	--	1.0	**120**	--	--	--	--	--	--	0.54
Fluoranthene	1.0	**74,000**	1.0	**22,000**	--	--	1.0	**2,300**	--	--	--	--	--	--	3.2
Indeno(1,2,3-cd)pyrene	1E-05	**1,100**	1E-05	**13**	--	--	1E-06	**0.38**	--	--	--	--	--	--	23
Phenanthrene	1.0	**110,000**	1.0	**33,000**	--	--	1.0	**3,400**	--	--	--	--	--	--	55
Phenol	1.0	**590,000**	1.0	**180,000**	--	--	1.0	**18,000**	--	--	--	--	--	--	0.098
Pyrene	1.0	**56,000**	1.0	**16,000**	--	--	1.0	**1,700**	--	--	--	--	--	--	17

Notes:

All Concentrations are in mg/kg; ND: not detected above detection limit (DL); NA: not applicable

0 foot cover assumes residual chemicals are present in surface soils, exposure pathways include soil ingestion, dermal contact, inhalation of fugitive dust/vapors in outdoor air

4 foot cover assumes a 4 foot clean soil cover over residual chemicals, exposure pathways include inhalation of vapors in outdoor air and indoor air

* Maximum assumed detection following removal of soil associated with Pits A through G, including soils impacted from migration of materials away from Pit F, and the removal of Tarry Wastes in Lagoons 1, 2, and 3

Table 5.2-1
Summary of Potential Chemical-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
FEDERAL ARARs			
Clean Air Act (CAA)		The CAA regulates air emissions of substances that may harm public health. Air pollutants that may be of concern at the site during remedial activities are listed below, along with primary NAAQS standards:	Relevant and Appropriate
a. National Primary and Secondary Ambient Air Quality Standards (NAAQS)	40 CFR 50-80	• PM_{10} (particulate matter, diameter 10 micrometer [μm] or less): annual – 50 micrograms per cubic meter ($\mu g/m^3$); 24-hour – 150 $\mu g/m^3$ • Pb (lead) quarterly average – 1.5 $\mu g/m^3$ Cleanup of the site is not likely to result in classification as a "major source" under the CAA unless emissions equal or exceed 100 tons per year (tpy) of the pollutants for which the area is designated non-attainment. State implementation plans contain the specific regulations which govern the emission rates for such areas.	
b. National Emissions Standards for Hazardous Air Pollutants (NESHAP)	42 USC 7401 *et seq.*	NESHAP is established on an industry- and process-specific basis and must provide "an ample margin of safety to protect public health" All major stationary and area sources that emit or have the potential to emit 10 tpy of any single hazardous air pollutant (HAP), or a total of 25 tpy of a combination of HAPs must comply with emission standards for that industry and HAP. This site contains many chemicals of concern, which are listed as HAPs, however, it is very unlikely that the releases from the site will reach the 10 or 25 tpy threshold.	Relevant and Appropriate
Clean Water Act (CWA)	33 USC 1251 *et seq.* 40 CFR 100-140, 400-470	The CWA regulates the discharge of nontoxic and toxic pollutants by specific and non-specific sources. The CWA also specifies water quality criteria, requirements for state water quality standards based on these criteria, and wetlands regulations.	Relevant and Appropriate

Table 5.2-1
Summary of Potential Chemical-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
a. National Primary and Secondary Drinking Water Standards	40 CFR 141.50-51, and 141.61-62 and 40 CFR 143.3	The national primary and secondary drinking water standards set concentration limits for public water systems. Primary drinking water standards include MCLs and MCLGs. These standards are relevant and appropriate to the extent that groundwater at the site is determined to be a potential drinking water source. Regulators may use MCLs to help define potential groundwater cleanup levels, should groundwater cleanup be necessary.	Relevant and Appropriate
Resource Conservation and Recovery Act (RCRA)	42 USC 6901 *et seq.* 40 CFR 240-271	RCRA establishes standards for the generation, management, and disposal of solid and hazardous waste. RCRA has limited application as an ARAR for alternative remedial actions at the site. Original waste disposal at the site generally ceased prior to RCRA regulations becoming effective in 1980. However, RCRA is relevant and appropriate in that solid wastes associated with petroleum refining are not exempt as RCRA hazardous waste and therefore activities on the site could potentially generate hazardous waste. In addition, certain remedial actions may include generation and disposal of solid or hazardous waste subject to RCRA requirements.	Relevant and Appropriate
STATE AND LOCAL ARARS			
Water Quality Control Plan Santa Ana River Basin, 1995 (Basin Plan)	Chapter 3, Beneficial Uses	Defines beneficial uses for ground water beneath the Ascon Landfill Site (Santa Ana Pressure Ground Water Subbasin) as: Municipal and Domestic Supply, Agricultural Supply, Industrial Supply, and Industrial Process Supply. Because ground water beneath the site is a potential drinking water source, selection of concentration cleanup and treatment levels should be made accordingly. The Basin Plan does not recognize the fact that ground water quality beneath the facility has been compromised by salt-water intrusion.	Applicable
	Chapter 4, Water Quality Objectives, Basin Plan	Defines the water quality objectives for taste and odor, bacteria, toxic substances, chemical constituents, and radioactivity. Any concentration limits, cleanup levels, and/or treatment levels established for the Ascon Landfill Site must comply with these objectives.	Applicable

Table 5.2-1
Summary of Potential Chemical-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
Updated Resolution to Santa Ana River Basin, 2004	Resolution No. R8-2004-0001	This resolution amends the Water Quality Control Plan for the Santa Ana River Basin to Incorporate an Updated Total Dissolved Solids (TDS) standard and Nitrogen Management Plan for the Santa Ana Region including revised ground water sub-basin boundaries. It has been submitted to the State Water Resources Control Board (SWRCB) for approval and will subsequently be submitted to the Office of Administrative Law (OAL) and the United States Environmental Protection Agency (USEPA) for final approval.	Applicable
Domestic Water Quality and Monitoring Regulations	22 CCR 64431, 64444, 64449	Establishes California primary and secondary drinking water standards for public drinking water supply systems (also known as "MCLs"). Specific California MCLs are relevant and appropriate where they are more stringent than federal MCLs. MCLs may be relevant and appropriate to the extent that the groundwater at the site is determined to be a potential drinking water source. Regulators may use MCLs to help define potential groundwater cleanup levels, should groundwater cleanup be necessary.	Applicable
California Safe Drinking Water and Toxic Enforcement Act of 1986	H & S Code 25249.5 *et seq*. 22 CCR 12000 *et seq*	This rule regulates discharges and exposures of chemicals known to the State of California to be carcinogenic or reproductive toxins. Warnings are required to be provided to individuals exposed to “significant risks.”	Applicable
Hazardous Waste Control Act (HWCA), as administered by the Department of Toxic Substances Control (DTSC)	22 CCR 66260 *et seq*.	The HWCA mandates the control of hazardous wastes from point of generation through accumulation, transportation, treatment, storage, and ultimate disposal.	Applicable
a. Criteria for Identifying Characteristics of Hazardous Wastes	22 CCR 66261.10 et *seq*.	Tests must be performed on chemicals to identify hazardous characteristics. If a chemical is either listed or tested and found hazardous, then remedial alternatives must comply with the hazardous waste management requirements.	Applicable

Table 5.2-1
Summary of Potential Chemical-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
b. Categories of Hazardous Waste	22 CCR 66261.100 et *seq*.	In addition to listing the four RCRA hazardous waste characteristics (reactivity, corrosivity, ignitability, and the Toxicity Characteristics Leachate Procedure [TCLP}, the HWCA regulations have established two other criteria: Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) for classifying hazardous waste. Bioassays assessing mammalian and aquatic toxicity of wastes are also used to determine whether a waste is hazardous under the HWCA. If a chemical is either listed or tested and found hazardous, then remedial alternatives must comply with the hazardous waste management requirements.	Applicable
c. Land Disposal Restrictions (LDRs)	22 CCR 66268.1 *et seq.*	LDRs identify hazardous wastes which are restricted from land disposal and defines treatment standards for both RCRA and Non-RCRA wastes. LDRs are applicable to wastes managed at off-site disposal facilities. In addition, all underlying hazardous constituents shall meet universal treatment standards prior to land disposal within a Class I deep injection well. LDRs are potentially applicable to wastes managed onsite. Any waste managed within a CAMU will not be subject to LDRs.	Applicable
Air Toxic "Hot Spot" Act, as implemented by the South Coast Air Quality Management District (SCAQMD) and administered by the California Air Resources Board.	17 CCR 933300 *et seq*.	This regulation requires operators of specified facilities to prepare and submit inventory emissions plans and reports. This may be considered potentially applicable dependent on air emissions data, and volume of emissions generated during remediation.	Applicable
California Integrated Waste Management Board regulations for solid waste	California Code of Regulations, Title 14	The California Integrated Waste Management Board regulations pertaining to solid waste promote the health, safety and welfare of the people of the State of California, and are aimed to protect the environment by establishing minimum standards for the handling of solid wastes.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
FEDERAL ARARs			
National Pollutant Discharge Elimination System (NPDES) under the CWA	33 USC 1342 40 CFR 122-125	The CWA regulates the discharge of nontoxic and toxic pollutants into surface water by specific and non-specific sources. The general requirements of a permit include (1) development and implementation of a Storm Water Pollution Prevention Plan (SWPPP); (2) elimination of non-storm water discharge to storm water conveyances; and (3) monitoring of the quality and quantity of storm water discharges. A Storm Water Permit for Construction will be required and if certain process discharges occur, (i.e., groundwater treatment) a separate NPDES discharge permit will also apply.	Relevant and Appropriate
Underground Injection Control	270.60(b) and 40 CFR 144, 146, 147 et seq.	Class I and V wells used for injecting hazardous waste must have authorization under both SDWA and RCRA. The well has SDWA authorization once a permit is issued under 40 CFR 144 or 145. A well is considered to have RCRA authorization when it qualifies for and maintains RCRA interim status or obtains a RCRA Part B Permit. A UIC injecting hazardous waste is subject to all 40 CFR 265 (general facility standards) except closure (Subpart G) and financial assurance (Subpart H). The EPA and State of California share responsibility for the Underground Injection Program.	Applicable
RCRA Section 3020(b)	42 U.S.C. § 3020(b)	Injection of contaminated groundwater back into the aquifer from which it was withdrawn is allowed if (1) the injection is conducted as part of a response action under CERCLA or a RCRA corrective action intended to clean up the contamination; (2) the contaminated water is treated to substantially reduce hazardous constituents prior to reinjection; and (3) the response action or corrective action will, on completion, be sufficient to protect human health and the environment.	Relevant and Appropriate
Spill Prevention Control and Countermeasure (SPCC) under the CWA	40 CFR 112	SPCC measures are designed to prevent discharge of oil to navigable waters. SPCC plans and implementation of spill control measures are required for sites exceeding the 1,320-gallon aboveground storage limit. SPCC requirements may	Relevant and Appropriate

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
		be potentially relevant and appropriate if petroleum storage in aboveground storage tanks or containers exceeds certain thresholds.	
National Oil and Hazardous Substances Pollution Contingency Plan (NCP)	40 CFR 300 *et seq.*	The NCP provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants. It establishes the methods and criteria for determining the appropriate extent of response authorized by CERCLA and CWA Section 311C.	Relevant and Appropriate
Department of Transportation (DOT) Hazardous Material Act Regulations	49 CFR 172-178	These regulations specify federal standards for transportation of hazardous materials, as defined by DOT.	Applicable
Federal Occupational Health and Safety Act	40 CFR 1910 *et seq.*	This regulation establishes the federal requirements for worker safety. All employees working at a Superfund or hazardous waste facility must have adequate 40-hour OSHA training in hazardous materials management.	Relevant and Appropriate
STATE AND LOCAL ARARs			
National Pollutant Discharge Elimination System Permit as managed by the SWRCB	California Water Code §2235.1 *et seq.*	The State of California implements the CWA by requiring permits for discharges to navigable waters. It is expected that a NPDES General Permit for Construction Activities will be required. Should groundwater extraction and discharge be conducted as part of a groundwater remediation program a separate NPDES permit will be required for this activity. A Storm Water NPDES General Permit requires the implementation of Best Management Practices (BMPs), implementation of a SWPPP, implementation of a storm water monitoring program and the elimination of non-storm water discharges.	Applicable
Discharges of Hazardous Waste to Land	23 CCR 2510-2559 and 2580-2597	Specifies water quality monitoring and response programs for waste management units. Requires establishing concentration limits, monitoring points, and points of compliance for ground water, surface water, and soil. The capping alternative would be subject to these regulations.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
Hazardous Waste Control Act (HWCA)	22 CCR 66260 *et seq.*	The HWCA mandates the control of hazardous wastes from point of generation through accumulation, transportation, treatment, storage, and ultimate disposal.	Applicable
a. Standards for Generators of Hazardous Waste	22 CCR 66262.10 *et seq.*	This regulation is applicable to hazardous waste resulting from remedial actions that generate hazardous waste on-site.	Applicable
b. Accumulation of Hazardous Waste	22 CCR 66262.34	Hazardous waste may be stored onsite in containers for up to 90 days. This regulation is applicable to wastes managed during implementation of the Preferred Remedy or maintenance.	Applicable
c. Analysis of hazardous waste	22 CCR66262.34	Requires analysis of hazardous waste before transfer, treatment, storage, or disposal.	Applicable
d. Storage of Hazardous Waste	22 CCR 66264.171-175, 66264.178	Requires storage of waste in appropriate containers and appropriate management and closure of containment areas. This is applicable to new units and Relevant and Appropriate for existing units.	Applicable
e. Standards for Transporters of Hazardous Waste	22 CCR 66263.10 *et seq*	This regulation stipulates that hazardous waste must be transported by a hauler registered by the state. To the extent that hazardous wastes are transported for the remedial actions, the requirements are potentially applicable.	Applicable
f. Hazardous Materials Release Response Plan and Inventory	H & S Code 25500 *et seq*. 19 CCR 2700 *et seq*.	Businesses that handle hazardous materials are required to establish a plan for emergency response to a release or threatened release of hazardous materials. This requirement is applicable to the site and the hazardous materials release response plan and inventory should be incorporated in to the site Health and Safety Plan.	Applicable
Standards for Owners and Operators of Hazardous Waste Transfer,	22 CCR 66264 *et seq.*	Sets standards for management of hazardous waste, closure, and post-closure requirements at permitted disposal facilities.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
Treatment, Storage, and Disposal Facilities			
a. Closure and Post-Closure Requirements	22 CCR 66264.110 *et seq.*	This regulation sets standards that minimize the need for further maintenance, and control, minimize, or eliminate post-closure escape of hazardous waste, leachate, contaminated rainfall, or waste decomposition products to the ground or surface water or the atmosphere. These standards are potentially applicable to certain remedial actions to the extent that the closure and post-closure requirements relate to the design requirements for monitoring ground water, stabilizing sump material, and isolating them to prevent direct contact.	Applicable
b. Environmental Performance Standards for Miscellaneous Units	22 CCR §2264.601	Requires location, design, construction and maintenance of miscellaneous units that treat hazardous waste to ensure protection of human health and the environment. This could be potentially applicable if any leachate treatment is conducted on site.	Applicable
c. Staging Piles	40 CFR 264.554	Staging piles may be used on site for temporary accumulation of non-flowable hazardous wastes. Wastes will not be treated while in the pile and may be stored for up to two years. This regulation will allow for temporary waste storage that will not trigger LDR requirements.	Relevant and Appropriate
d. Corrective Action Management Units (CAMU)	22 CCR 66264.552 *et seq*. (RCRA) 22 CCR 66264.552.5 *et seq*. (Non-RCRA	One or more CAMUs may be designated on site and used to manage remediation waste. There is no specified time limit for waste storage, and waste can be treated both in-situ or ex-situ. The consolidation or placement of remediation wastes into or within a CAMU does not constitute disposal of hazardous waste and does not constitute the creation of a unit subject to minimum technology requirements.	Applicable
e. Thermal Treatment Units	22 CCR 264.370 *et seq.*	This regulation applies to facilities that thermally treat hazardous waste in devices other than enclosed units using	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
		controlled flame combustion. It is potentially applicable to the extent that on-site thermal treatment is utilized to comply with SCAQMD Rule 1166.	
Requirements for Design and Operation of Landfills	22 CCR 66264.300 *et seq*.	General design requirements for constructing/closing a landfill are similar to requirements for construction/closing of a surface impoundment. These closure and post-closure requirements are potentially applicable to the extent that they provide protective guidance regarding placement of wastes at the site and minimization of release of chemicals of concern present in sump materials.	Applicable
Municipal Solid Waste Landfill (MSWLF) Closure	40 CFR 257	Part 257 covers only those solid waste landfills not meeting the definition of MSWLF. This includes sites which accepted non-hazardous industrial waste. These regulations address compliance with other regulations including water, air, safety, and endangered species. Requirements for groundwater monitoring and assessment, remedy selection, and implementation of corrective action are also specified. This regulation is potentially applicable to the extent that waste under the alternative for a landfill cap, could be characterized as non-hazardous. Although the Ascon Landfill Site received some non-hazardous waste and debris, it does not meet the definition of a Municipal Solid Waste Landfill.	Applicable
California Integrated Waste Management Board		Establishes regulations for non-hazardous, solid waste landfills. These regulations may be potentially applicable to the extent that the material under the landfill cap alternative may be characterized as non-hazardous. The County serves as the LEA, as authorized by the California Integrated Waste Management Board, overseeing the construction, operation, and closure for all landfills in the County. The LEA requires that a written work plan be submitted, reviewed, and approved prior to initiating any field work. Landfill closures must follow California requirements for Clean Closure.	Applicable
	14 CCR 17701	Requires operation and maintenance of landfills to prevent public nuisance.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
	14 CCR 17706	Requires operation and maintenance of landfills to minimize dust creation.	Applicable
	14 CCR 17707	Requires operation and maintenance of landfills to control vectors (insects, rodents, etc.)	Applicable
	14 CCR 17713	Requires operation and maintenance of landfills to control odors.	Applicable
	14 CCR 17767(c)	Requires security measures to prevent unauthorized access to closed landfills and monitoring, control, and recovery systems.	Applicable
Division of Oil and Gas	14 CCR 1748-1748.3	All Class II injection wells require prior approval from the Division of Oil and Gas. This regulation is potentially applicable, should it be determined that a Class II injection well will be used to manage non-hazardous wastes on site.	Applicable
California Vehicle Code	Vehicle Code 31301-31309	Transportation of placarded hazardous materials and/or hazardous waste will be conducted on state and interstate highways which offer the least overall transit time. Congested roads and residential districts shall be avoided. This is applicable, to the extent that placarded hazardous wastes are transported off site.	Applicable
	Vehicle Code 31306	A list of highways which are prohibited or restricted for certain types of trucks or loads shall be published or updated by CHP semiannually. This is applicable to the extent that wastes are transported off site.	Applicable (Alt 1, 2, 3)
Mulford-Carrell Air Resources Act as implemented by the South Coast Air Quality Management District (SCAQMD) and administered by the Air Resources Board (CARB)	H & S Code 39000 *et seq*.	The CARB and local air pollution control districts develop control measures aimed at reducing emissions of identified pollutants. Although it sets no standards, this Act is potentially applicable.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
SCAQMD Rules and Regulations			
a. Permits (1) Permits to Construct	Rule 201	Remedial actions viewed as a "stationary source" by the SCAQMD will require a permit to construct prior to initiating the remedial action.	Applicable
(2) Permit to Operate	Rule 203	Remedial actions deemed a "stationary source" will require a permit to operate.	Applicable
b. Prohibitory Rules (1) Visible Emissions	Rule 401	This rule limits visible emission from any point source.	Applicable
(2) Nuisance	Rule 402	This rule prohibits the discharge of any material, including odorous compounds that may cause injury, annoyance to the public, property, or business, or may endanger human health, comfort, peace, or safety.	Applicable
(3) Fugitive Dust	Rule 403	This rule limits on-site activities so that the emissions of fugitive dust from the operation shall not remain visible in the atmosphere beyond the property line of the emission source or the dust emission exceeds 20% opacity if the dust emission is the result of movement of a motor vehicle and the particulate concentration shall not be more than 50 $\mu g/m^3$. This rule also requires implementation of listed measures to minimize fugitive dust and the prevention and cleanup of material accidentally deposited on paved streets. A large operation notification must be submitted and there must be implementation of large operation control measures as stated.	Applicable
(4) Particulate Matter	Rule 404	This rule limits particulate emission for given volumetric gas flow rates.	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
(5) Solid Particulate Matter	Rule 405	This rule establishes allowable discharge rates for particulates.	Applicable
(6) Liquid and Gaseous Air Contaminants	Rule 407	This rule establishes allowable discharge rates for carbon monoxide and sulfur dioxide.	Applicable
(7) Circumvention	Rule 408	This rule prohibits the unauthorized reduction or concealment of an emission.	Applicable
(8) Fuel Combustion Contaminants	Rule 409	This rule limits the emissions of particulate matter from the exhaust of combustion source.	Applicable
(9) Sulfur Contents of Gaseous, Liquid, or Fossil Fuels	Rules 431.1, 431.2, and 431.3	These rules limit sulfur compounds from combustion of gaseous fuels.	Applicable
(10) Fuel Burning Equipment	Rule 474	This rule limits the concentration of oxides of nitrogen from non-mobile fuel burning equipment.	Applicable
c. Source-Specific Standards			
(1) Excavation of Landfill Sites	Rule 1150	Remedial actions requiring excavation must obtain approval of an Excavation Management Plan by the Executive Officer of the SCAQMD. The Plan must provide information regarding the quantity and characteristics of the materials to be excavated and transported and shall identify mitigation measures including gas collection and disposal, baling, encapsulation, covering of the materials, and chemical	Applicable

Table 5.2-2
Summary of Potential Action-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
		neutralizing.	
(2) Volatile Organic Compound (VOC) Emissions from Decontamination of Soil	Rule 1166	This rule limits the emissions of VOCs from contaminated soil. It requires the preparation of a VOC Contaminated Soil Mitigation Plan. This rule specifies limits for cancer risk and excess cancer cases from new stationary sources and modifications to existing stationary sources that emit carcinogenic air contaminants.	Applicable
d. New Source Review of Carcinogenic Air Contaminants	Rule 1401	This rule establishes allowable emission impacts for all such stationary sources requiring new permits. Best Available Control Technology for Toxics (T-BACT) will be required for any system where a lifetime maximum individual cancer risk of 10^{-6} or greater is estimated to occur.	Applicable
California Occupational Safety and Health Act (CalOSHA)	Labor Code Section 6300 et seq. 8 CCR 330 *et seq*.	This regulation establishes the state requirements for worker safety. All employees working at a Superfund or hazardous waste facility must have adequate 40-hour OSHA training in hazardous materials management.	Applicable

Table 5.2-3
Summary of Potential Location-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
FEDERAL ARARs			
Municipal Solid Waste Landfill Closure	40 CFR 258	Existing units are subject only to airport safety, flood plain, and unstable area controls.	Relevant and Appropriate
Underground Injection Control	40 CFR 144, 146, 147 et seq.	Wells must be constructed and located to prevent movement of fluids into underground sources of drinking water.	Relevant and Appropriate
Endangered Species Act	16 USC 1530 *et seq.* 40 CFR 6.302 50 CFR 17, 200, 402	The Endangered Species Act protects listed species and their habitat in the area of the proposed remedial action. To the extent such species are present at the site, this requirement is potentially applicable.	Relevant and Appropriate
Migratory Bird Treaty Act	16 USC §703-711	Except as permitted by regulations, it is unlawful to pursue, hunt, take, capture, offer to sell, barter, purchase, or deliver any migratory bird, nest, or egg. The remedial design process will identify measures necessary to prevent an unregulated "take" of protected bird species.	Applicable
Fish and Wildlife Coordination Act	16 USC 661 *et seq.* 33 CFR 320-330	This Act requires federal and state agencies to ensure that actions do not jeopardize the existence of wildlife and their habitat. Where any action by a federal or state agency impounds, diverts, or controls water bodies or streams, that agency must first consult with the U.S. Fish and Wildlife Service, the Department of the Interior, and the California Department of Fish and Game. To the extent such wildlife and habitat are present at the site, this requirement is potentially applicable.	Relevant and Appropriate
Coastal Zone Management Act	16 USC 1451 *et seq.*	This Act requires federal agencies conducting or supporting activities directly affecting the coastal zone to ensure that such activities are consistent with the state program. "Coastal Zone" is defined as the "coastal waters…and the adjacent shore lands (including the waters therein and thereunder) strongly influenced by each other and in proximity to the shorelines of several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches…The zone extends inland from the shorelines only to the extent necessary to control shore lands, the uses of which	Relevant and Appropriate

Table 5.2-3
Summary of Potential Location-Specific ARARs
Ascon Landfill Site

Type/Name of Potential ARAR	Citation	Description and Comments	Potentially Applicable or Relevant and Appropriate
		have a direct and significant impact on the coastal water."	
STATE AND LOCAL ARARs			
Standards for Owners and Operators of Transfer, Treatment, Storage, and Disposal Facilities	22 CCR §66264.18 (a)	The construction or substantial modification of hazardous waste treatment, storage, or disposal facilities are prohibited within 200 feet of a fault displaced in the Holocene time.	Applicable
	22 CCR §66264.18 (b)	A facility located in a 100-year floodplain shall be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood.	Applicable
Seismic Zone	23 CCR 2547	Waste management units must be designed to withstand the maximum credible earthquake without damage to the foundation or to structures that control leachate. This regulation is relevant and appropriate for existing units and Applicable for new units.	Relevant and Appropriate / Applicable
California Coastal Act	Public Resources Code 30200 *et seq*.	Activities that change the intensity of use of land generally require a permit prior to development. A Local Coastal Program is approved for the city of Huntington Beach resulting in the city being responsible for processing the permit and applying the Coastal Act.	Applicable
California Endangered Species Act as implemented by the California Department of Fish and Game	Fish and Game Code 2080 *et seq*.	No person shall import, export, take, sell, or possess any species determined to be endangered by the State. This Act is applicable to the extent that endangered species occupy the site.	Applicable

Table 5.2-4
Summary of To-Be-Considered (TBC) Criteria
Ascon Landfill Site

Name of To-Be-Considered ARAR	Citation	Description and Comments
SWRCB Resolution 88-63	SWRCB Res. 88-63	This resolution addresses site-specific conditions that should be considered in determining appropriate beneficial uses for groundwater beneath the site. Groundwater with solids concentrations exceeding 3,000 milligrams per liter (mg/L) and/or sustained yield less than 200 gallons per day should not be considered as a source of drinking water.
SWRCB Resolution 68-16	SWRCB Res. 68-16	This resolution requires maintenance of existing water quality unless it is demonstrated that a change will benefit the people of the State, will not unreasonably affect present or potential uses, and will not result in water quality less than that prescribed by other state policies. Further, the resolution requires that any activity that discharges waste to high quality water be required to meet waste discharge requirements. This policy is a TBC criterion identifying appropriate groundwater quality criteria for groundwater beneath the site.
SWRCB Resolution R8-2002-0007	SWRCB Res. R8-2002-0007	This resolution addresses general waste discharge requirements for discharges to surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbon and or solvents at service stations and similar sites. It is a TBC criteria if groundwater is reinjected to the ground, percolated on site, or used for dust control on site.
SWRCB Resolution 92-49	SWRCB Res. 92-49	The SWRCB's Policies and Procedures for Investigation and Cleanup and Abatement under Section 13304 of the Water Code, Resolution 92-49, establishes those conditions under which a Water Board or a local agency supervising cleanup "may establish containment zones (areas of groundwater where water quality objectives cannot be reasonably achieved). In such cases, the Regional Water Quality Control Board (RWQCV) must require implementation of environmental mitigation measures to offset implementation measures to offset significant adverse impacts from leaving pollutants in the groundwater. Furthermore, Resolution 92-49 requires that actions for cleanup and abatement "conform to the provisions of Resolution 68-16 of the SWRCB, and the Water Quality Control Plans of the SWRCB and the Water Boards, provided that under no circumstances shall these

Table 5.2-4
Summary of To-Be-Considered (TBC) Criteria
Ascon Landfill Site

Name of To-Be-Considered ARAR	Citation	Description and Comments
		provisions be interpreted to require cleanup and abatement which achieves water quality conditions that are better than background conditions.
SCAQMD Best Available Control Technology (BACT)	SCAQMD BACT Guidelines Document	This guidance may be a TBC when an owner operator seeks to obtain a permit for a piece of equipment emitting air contaminants.
Risk Assessment Guidance for Superfund (RAGS) Part B	EPA/540/R-92/003	This guidance provides assistance in assessing Preliminary Remediation Goals (PRGs) for the Human Health Risk Assessment.
EPA Region IX PRGs 2004	Region IX PRG Table, 2004	The PRGs are guidelines that include risk-based concentrations for chemicals to assist risk assessors in initial screening level evaluations.
EPA Technical Guidance Document: Final Covers on Hazardous Waste Landfills and Surface Impoundments	EPA/530/SW-89/047 July	This guidance addresses landfill covers and recommends a multilayer final cover design.
Alternative Cap Design Guidance – EPA Region I	Revised Alternative Cap Design Guidance Proposed for Unlined, Hazardous Waste Landfills in the EPA Region I, February 5, 2001	This document provides guidance for the construction of Alternative Caps that will meet the technical requirements stated in 264.310. Final covers must be designed to provide long-term minimization of migration of liquids through the closed landfill; function with minimum maintenance; and promote drainage and minimize erosion or abrasion of the cover. This guidance is a TBC criteria for landfill alternatives.
City of Huntington Beach Soil Clean-Up Standard	City Specification 431-92	The City has established risk-based hydrocarbon clean-up goals for residential and commercial/industrial developments and methodologies for sampling, remediation, and reporting of sites with petroleum hydrocarbon problems. The residential goals are <500 parts per million (ppm) total petroleum hydrocarbons (TPH) and <1,000 ppm TPH for commercial and industrial properties. Additional clean-up goals have been established for aromatic and polycyclic aromatic hydrocarbons.
City of Huntington Beach Building Requirements	Uniform Housing Code (1997)(by adoption), California Government Code Section 50027.2, Health and Safety Code 18941.5	The City has adopted the Uniform Housing Code for construction. This ARAR would be applicable for any development after Site remediation.
Orange County Health Care Agency – Public Health Division of Environmental Health	Orange County Code Article 2, Section 4-5-17	The Orange County code contains standards and requirements for groundwater wells in order to protect groundwater quality in the basin. A permit must be obtained from the County prior to the construction or abandonment of any well.

Table 5.2-4
Summary of To-Be-Considered (TBC) Criteria
Ascon Landfill Site

Name of To-Be-Considered ARAR	Citation	Description and Comments
California Truck Networks Route List	Available through California Highway Patrol (CHP)	A list of state truck route segments and their truck access designations is published. This is a TBC criterion for those wastes that will be shipped off site.
Caltrans Special Restrictions Route List	Available through CHP	This publication lists by county where certain types of trucks and/or loads are prohibited. This is a TBC criterion for those wastes that will be shipped off site.
Information Advisory – Clean Imported Fill Material	DTSC Fact Sheet, October 2001	This publication discusses means to make sure that inappropriate fill materials are not introduced onto sensitive land use properties.
Advisory – Active Soil Gas Investigations	DTSC, January 13, 2003	This publication outlines methodologies for soil gas investigations.
Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air – Interim Final	DTSC, December 15, 2004, revised February 7, 2005	Discusses approach for evaluating vapor intrusion into building and mitigation of the same.

Table 6.5-1.
Waste Volume Estimates
Ascon Landfill Site

Waste	Volume Estimate Determination: EVS Estimated Volume [a] (*in-situ* cy)	Volume Estimate Determination: Thickness x Area Estimated Volume (*in-situ* cy)	Volume Estimate Determination: Estimated Thickness (ft)	Volume Estimate Determination: Estimated Area (ft^2)	Waste Volumes and Weights: Estimated Material Volume Expansion Factor	Waste Volumes and Weights: Estimated Ex-Situ Volume (cy) [b]	Waste Volumes and Weights: Estimated Material Density (tons/cy)	Waste Volumes and Weights: Estimated Material Weight (tons) [c]
Lagoon 1 Tarry Liquids	not determined	9,300	5	50,000	1.0	9,300	1.0	9,300
Lagoon 2 Tarry Liquids	not determined	11,500	5	61,720	1.0	11,500	1.0	11,500
Lagoon 3 Tarry Liquids	not determined	4,700	2	63,504	1.0	4,700	1.0	4,700
Lagoon 4 Drilling Muds	not determined	38,000	8	128,000	1.0	38,000	1.1	41,800
Lagoon 5 Drilling Muds	not determined	21,000	8	70,900	1.0	21,000	1.1	23,100
Pits A, B, H	not determined	8,200	A (26) : B (26) : H (16)	A (2,740) : B (3,700) : H (3,350)	1.15	9,430	1.5	12,300
Pits C, D, G	not determined	3,925	C (10.5) : D (10.5) : G (10.5)	C (3,800) : D (3,390) : G (2920)	1.15	4,514	1.5	5,888
Pit E	not determined	4,100	14	7,923	1.15	4,715	1.5	6,150
Pit F Liquids	not determined	75	2	1,000	1.0	75	1.0	75
Pit F Area Styrene-impacted soils [d]	not determined	40,700	20	55,000	1.15	46,805	1.5	61,050
Impacted Fill Soils (non-pit)	291,000	not determined	not determined	not determined	1.15	334,650	1.5	436,500
Highly Liquid Drilling Muds (non-pit, exc. Lagoons 4 & 5) [e]	310,000	not determined	not determined	not determined	1.05	325,500	1.2	372,000
Drilling Muds (unsaturated) (non-pit, non-lagoon)	186,000	not determined	not determined	not determined	1.1	204,600	1.3	241,800
Fill Soils (minimally-impacted)	364,000	not determined	not determined	not determined	1.15	418,600	1.5	546,000
Concrete/Construction Debris [f]	69,000	not determined	not determined	not determined	1.0	69,000	2.0	138,000
Impacted Native Clay [g]	not determined	61,000	1	1,655,000	1.2	73,200	1.5	91,500
TOTAL:		**1,422,500**			**TOTALS:**	**1,575,589**		**2,001,663**
Surface Water (stormwater accumulation) [h]		13,600	0.5	735,300				

cy - cubic yards; approximate, rounded values are shown

a - EVS Volume Estimate is calculated using GIS/EVS waste-type volume modeling based upon 203 boring logs drilled on the Ascon Landfill Site Property. Wastes which may be present on the SCOC property (southwest of the Site) are not included in the volumes shown above.

b - *Ex-situ* volume determined by multiplying either the EVS-Estimated volume or the Thickness x Area-Estimated volume by the estimated material expansion factor.

c - Material Weight determined by multiplying the estimated material density by the *in-situ* volume estimate (EVS or Thickness x Area estimate)

d - Volume estimate includes non-impacted overburden native soil.

e - Highly-Liquid Drilling Muds volume includes volume contained within Lagoons 1, 2, and 3 beneath Tarry Liquids.

f - Concrete/construction debris estimate includes aboveground piles and non- or minimally-impacted subsurface concrete/construction debris.

g - Impacted Native Clay Estimate is based upon an assumed 1.0-foot thickness over the surface area of the entire site.

h - Surface water accumulation assumes collection within the 5 lagoons at the site. The current drainage area of the lagoons is approximately twice the surface area. The equivalent accumulated volume is approximately 2,750,000 gallons. This is a general estimate only, and does not consider specific storm durations, intensities or frequencies, or any factors for infiltration.

Table 6.5-2
Comparison of Volume Estimates
Ascon Landfill Site

Excavation Volume in Cubic Yards

Additional Assumption	Radian[7] 1988	ESE[8] 1997	J&W[9] 1998	Project Navigator, Ltd.[10] 2002	Project Navigator, Ltd.[11] 2007
None[1] (Baseline Assumption)	691,000	691,000	648,822	N/A	1,003,500
Clean Fill (Only)	830,500	830,500	806,192	N/A	433,000
Contingency (Only)	830,000	830,000	(NC)[12]	N/A	(NC)[12]
Contingency on Waste (+ Fill)[2]	969,500	969,500	936,880	N/A	(NC)[12]
"Fluff" Factor (+ Fill)[3]	986,579	986,579	959,076	N/A	(NC)[12]
Berms/Construction Debris (+ Fill)[4]	1,019,056	1,019,056	994,748	1,050,100	1,436,500
"Fluff" + Berms/Debris (+ Fill)[5]	(NC)[12]	(NC)[12]	1,148,803	1,250,800	1,575,600
All[6]	1,341,308	1,341,308	1,303,945	1,502,702	1,575,600

NOTES:

1. Baseline volume assumption includes – Pits, Lagoons, and Former Lagoons. J&W and Project Navigator, Ltd. (2005) Baseline includes Affected Soils volume also.
2. Baseline Assumption + Fill + Contingency. Contingency on wastes only (20%).
3. Baseline Assumption + Fill + "Fluff." "Fluff" is increase in volume post-excavation due to removal of compaction and aeration (~20% as used by ESE). On non-liquid and non-tarry wastes only.
4. Baseline Assumption + Fill + Berms/Debris.
5. Baseline Assumption + Fill + "Fluff" + Berms/Debris.
6. Baseline Assumption + Fill + Contingency + "Fluff" + Berms/Debris.
7. Radian Final Site Characterization Report. Radian's reported estimate of 691,000 cy of wastes assumes that the pit areas in total have a volume that exceeds the sum of the estimated pit volumes by 960 cy. Pits (9,650) + Lagoons (300,200) + Former Lagoons (381,200) gives a total volume of 691,050 cy which has been rounded down in the report to the stated volume of 691,000 cy. Volume of the surface fill has been excluded from this estimate.
8. ESE Remedial Investigation. ESE used the Radian [1988] volume estimate as the basis for their volume estimate. ESE assumed that the cross-sectional area of waste grew as one went deeper under the surface due to potential waste migration. This assumption led to an over all increase of 10%-20% in the waste volume. ESE estimated a waste volume, *excluding* clean fill, of 750,000 to 830,000 cy. A strict application of the increase percentages of 10% - 20% gives us a range of 760,000 cy to 830,000 cy. ESE assumed that soil was not compacted and the "Fluff" factor was 0%. Also, as for Radian, ESE estimate does not include clean fill or affected soils.
9. J&W estimate as provided in the ENVIRON Feasibility Study (Table A.6-3). J&W estimates as reported in the ENVIRON FS.
10. WMCROF & SCM (Project Navigator, Ltd., 2002). Project Navigator, Ltd. estimates are based on GIS-EVS and site maps and aerials from previous reports.
11. This report; see Section 6.4 for detailed description.
12. (NC) – Not Calculated.

Table 8.4-1
Media, Remedial Action Objectives, and General Response Actions
Ascon Landfill Site

Media	Remedial Action Objectives	General Response Actions
Groundwater	Prevent ingestion of and dermal contact with groundwater and inhalation of VOCs from groundwater. Prevent further degradation of groundwater quality and migration of COPCs to offsite groundwater (i.e., to City parcel).	No Action Institutional Controls Monitoring Containment (Engineering Controls) Collection/Treatment/Discharge Treatment (*in situ*)
Tarry Liquids (Lagoons 1-3)	Prevent human and ecological exposure to tarry waste in Lagoons 1, 2, and 3. Prevent migration of COPCs from tarry waste to groundwater.	No Action Institutional Controls Containment Removal/Treatment (emissions reduction and disposal preparation)/Disposal
Soil/Solid Waste -- CHP Parcel (Impacted Soil, Minimally-Impacted Soil, Pits, Drilling Muds, Highly Liquid Drilling Muds, Debris)	Prevent human and ecological exposure to solid wastes. Prevent migration of COPCs from solid waste to groundwater.	No Action Institutional Controls Containment Removal/Treatment (emissions reduction and disposal preparation)/Disposal Recycle (Debris only)
Soil/Solid Waste -- City Parcel	Prevent human (e.g., City worker) and ecological exposure to solid wastes. Prevent migration of COPCs from solid wastes to groundwater.	No Action Institutional Controls Containment Removal/Treatment (emissions reduction and disposal preparation)/Disposal Recycle (Debris only)
Pit F Waste and Pit F-impacted soils	Prevent human and ecological exposure to Pit F waste and Pit F-impacted soils. Prevent migration of COPCs from Pit F waste and Pit F-impacted soils to groundwater.	No Action Institutional Controls Containment Removal/Treatment (emissions reduction and disposal preparation)/Disposal Recycle (Debris only)

Table 8.5-1
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Groundwater
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
No Action	None	None	Low: Does not achieve remedial action objectives.	None	None	High: Implementable because no action required.	No cost	Retain (required by NCP)
Institutional Controls	Administrative Controls	Deed Restrictions	High: Effective for preventing installation of wells.	NA	NA	High: Land owners (CHP) can readily implement.	Low	Retain
	Engineering Controls	Fencing	Low: Ineffective for protection from vapors from groundwater.	NA	NA	High: Exists at Site already.	Low	**Reject**
		Signs	Low: Ineffective for protection from vapors from groundwater.	NA	NA	High: Exists at Site already.	Low	**Reject**
Monitoring	Monitoring	Monitoring	High: Effective at perimeter for determining if residual or capped waste is leaching contaminants to groundwater and subsequently migrating offsite.	Low: Permits required for well installation.	NA	High: Wells already exist for monitoring, although more may be needed to replace wells that were abandoned during the EA. Some well may be needed between the CHP and City parcels.	High: Long term cost for monitoring, sampling, and analytical testing. Potentially significant short-term cost for installation.	Retain
Containment	Capping	Monolithic Soil Cap	Moderate: Provides moderate groundwater protection from leaching contaminants but low protection from VOCs from groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	Low to Moderate relative to Multilayer Cap, even if modified with vapor/leachate collection systems.	Retain
		Geomembrane Cap	Moderate: Provides moderate groundwater protection from leaching contaminants and moderate protection from VOCs from groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.		Retain
		RCRA-Equivalent Cap	High: Provides high groundwater protection from leaching contaminants and high protection from VOCs from groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	More expensive than Monolithic Soil Cap due to installation and maintenance of liners and engineered systems.	Retain
		RCRA Cap	High: Provides high groundwater protection from leaching contaminants and high protection from VOCs from groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate: Depends on availability of cap materials, a more difficult task than for other caps due to additional layers.	Highest cost of capping options. Higher cost unjustified.	**Reject**

Table 8.5-1
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Groundwater
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Containment	Vertical Barriers	Slurry Trench Cutoff Walls	Low: Ineffective for preventing long-term migration of groundwater and leaching to groundwater.	--	--	--	--	**Reject**
		Grout Curtains	Low: Ineffective for preventing long-term migration of groundwater and leaching to groundwater.	--	--	--	--	**Reject**
		Sheet Pile Cutoff Walls	Low: Ineffective for preventing long-term migration of groundwater and leaching to groundwater.	--	--	--	--	**Reject**
	Horizontal Barriers	Liners	Moderate: Moderately effective for preventing leaching of contaminants to groundwater.	Low	NA	Low: Site-wide installation of liners is infeasible.	--	**Reject**
Collection/Treatment/Discharge	Collection	Interceptor Trenches w/ Pumps	High: Effective for capturing migrating plumes.	Low-Moderate: Permits may be required for excavation of trenches for subsurface drains.	Low: Equipment for capturing emissions from vacuum trucks may be needed.	High: Equipment is readily available and easily installed at the Site.	Low-Moderate	Retain
		Wells w/ Pumps	Moderate-High: Moderately to highly effective for capturing migrating plumes, depending on hydrologic conditions.	Low: Permits will be required for wells.	Low	Moderate: Wells readily installable.	Moderate	Retain
		Vapor Control Systems	High: Effective when installed in conjunction to an appropriate cap.	Low	NA	High: Readily implementable with a cap.	Moderate	Retain
		Excavation	Moderate: Removal of contaminated groundwater through direct removal and removal from excavation bottom (i.e., dewatering during Pit F removal) is moderately effective.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate-High: Emissions control required due to exposed waste.	Moderate	High: Excavation cost high relative to collection/treatment or *in situ* treatment.	Retain
		NAPL Recovery (bailing)	Low: NAPL is viscous and does not readily enter wells.	Low	Low	High	Low	**Reject**

Table 8.5-1
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Groundwater
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Collection/Treatment/Discharge	Ex Situ Treatment	Granular Activated Carbon Filtration	High: A proven, off-the-shelf technology for removal of soluble VOCs. May need to be combined with Oil/Water Separation treatment.	Low	NA	High: Equipment is readily available and proven.	Low-moderate: Relative to offsite landfill disposal.	Retain
		Air Stripping	Low	Moderate: Air discharge will require cleanup and permit.	Offgas air requires treatment.	Low: High TDS and low VOC concentration make unimplementable.	--	**Reject**
		Oil/Water Separation	High: A proven, off-the-shelf technology.	Low	Low: Units are typically covered and vented to granular activated carbon (GAC) scrubbers.	High: Equipment is readily available and proven.	Low-moderate: Relative to offsite landfill disposal.	Retain
	Discharge	Onsite Discharge to Ground	High: Utilize onsite treated water for dust control and soil compaction.	Low: Permits may be required.	NA	High: Uses readily available equipment for reuse of water onsite.	Low: The cheapest overall approach, if allowed. Also decreases the needed quantity of fresh water from other sources.	Retain
		Offsite Discharge to Storm Drain or Sanitary Sewer (POTW)	High: Removes large volumes of water quickly, once permits and infrastructure are in place.	High: Agency permits would be required for discharge to storm drain or POTW.	Low: Water is contained in hoses/pipelines prior to discharge. Treatment units are enclosed.	High: Utilizes readily available equipment/practices.	Relatively low compared to offsite disposal at a landfill, even if pre-treatment is required.	Retain
		Offsite NAPL/Groundwater Disposal to Landfill (with Treatment)	High: Quantity of waste removed depends on availability of transport trucks.	Low: Receiving facility acceptance/manifests will be required for disposal.	Low	Moderate: Depends on availability of vacuum transport trucks.	High: Relative to disposal to storm drain/sanitary sewer or to ground.	Retain

Table 8.5-1
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Groundwater
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
In Situ Treatment	In Situ Treatment	Air Sparging	Low: Soils and muds not amenable to sparging.	Moderate	High: Sparging results in large potential of enhanced offgasing.	Low	Low	**Reject**
		Chemical Oxidation	Moderate: An off-the-shelf technology, oxidation destroys contaminants by converting them into naturally-occurring compounds. Site demonstration needed.	Low-Moderate: Permit will be required for installation of injection wells.	Low: Treatment is in ground, and harmless emissions will be contained in groundwater aquifer.	Moderate-High: Equipment is readily available and easily installed and operated.	Moderate: Compared to other *in situ* treatment technologies.	Retain
		Permeable Reactive Zone	Low: Groundwater gradient is not sufficient to engineer an effective capture zone.	Low	Low	Moderate	Moderate	**Reject**
		Natural Attenuation/Bioremediation - Enhanced with addition of oxygen or other amendments	Moderate-High: Destroys contaminants through natural processes, enhanced by addition of oxygen and other amendments. Site demonstration needed.	Low-Moderate: Permits will be required for well installation and injection of amendments.	Low: Treatment is in ground, and harmless emissions will be contained in groundwater aquifer.	High: Only requires monitoring wells after initial injection with direct push drill rig.	Moderate-High: Compared to other *in situ* treatment technologies.	Retain

Table 8.5-2
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Tarry Waste
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
No Action	None	None	Low: Does not achieve remedial action objectives.	None	None	High: Implementable because no action required.	No cost.	Retain (required by NCP)
Institutional Controls	Administrative Controls	Deed Restrictions	Moderate: Restrictions in land use will provide moderate protection.	NA	NA	High: Land owners (CHP) can readily implement.	Low	Retain
	Engineering Controls	Fencing	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
		Signs	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
		Netting	Moderate: Moderately prevents direct exposure to wildlife, but not a permanent solution.	NA	NA	High: Exists at Site already.	Moderate. Significant long-term O&M cost.	**Reject**
Containment	Capping	Monolithic Soil Cap	Low-Moderate: Acts as a physical barrier to waste but not to water infiltration (except by evaporation) or upward migration of vapors from waste. Also subject to surface cracking/settling.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Low: Cannot cap tarry fluids without significant treatment.	Low to Moderate relative to Multilayer Cap, even if modified with vapor/leachate collection systems.	**Reject**
		Geomembrane Cap	Moderate: Geomembrane increases protectiveness from vapors.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Low: Cannot cap tarry fluids without significant treatment.		**Reject**
		Multilayer Cap	Very High: Has features of a Monolithic Soil Cap plus protective liners to impede water infiltration/vapor migration. Also has collection and treatment systems for leachate and landfill gas.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Low: Cannot cap tarry fluids without significant treatment.	More expensive than Monolithic Soil Cap due to installation and maintenance of liners and engineered systems.	**Reject**
		RCRA-Equivalent Cap	Very High: Provides the most protection of all cap selections.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate: Depends on availability of cap materials, a more difficult task than for other caps due to additional layers.	Highest cost of capping options. Higher cost unjustified.	**Reject**

Table 8.5-2
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Tarry Waste
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Containment	Vertical Barriers	Slurry Trench Cutoff Walls	Moderate: Moderately effective for tarry, flowable waste.	Low	Low	Low: Trenching near Lagoons would be difficult.		**Reject**
		Grout Curtains	Moderate: Moderately effective for tarry, flowable waste.	Low	Low	Low: Unimplementable in muds near Lagoons.		**Reject**
		Sheet Pile Cutoff Walls	Low: Ineffective for tarry, flowable waste.	Low	Low	Moderate		**Reject**
	Horizontal Barriers	Liners	Low: No long-term effectiveness.	Low	Low	High	Low	**Reject**
	Sediment control barriers	Storm Water Containment	NA: Tarry waste contributes no sediments.	Low	None	NA	NA	**Reject**
	Dust control	Revegetation	NA: Tarry waste contributes no dust.	Low	None	Low: Cannot revegetate in tarry waste.	NA	**Reject**
		Capping	NA: Tarry waste contributes no dust.	Low	None	Low: Cannot cap tarry waste without significant physical treatment.	NA	**Reject**
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation	High: Permanent removal of waste provides long-term solution.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate-High: Emissions control required due to exposed waste.	Moderate-High: Will require mixing with soils or other means to enable handling/transport.	High: Transportation and disposal cost are significant.	Retain
	Emissions Control	Foam Suppressants	Moderate-High: Medium to High Effectiveness, although subsequent applications may be required if materials are disturbed/moved.	Foams do not require a specific permit to use.	NA: Foams are a means of controlling emissions from waste materials.	High: Technology is effective for on-spot control of VOC and odor emissions. Not a SCAQMD-approved treatment method for VOC impacted soils.	Very Low	Retain
		Ex situ Thermal Desorption	High	High: AQMD permit and requirements would be significant.	High level of emissions control required due to exposed waste and elevated temperatures.	Moderate	High -compared to use of foam suppressants, water, etc.	**Reject**
		Ex situ Chemical Oxidation	Low: Treatability testing showed ineffective for light-end hydrocarbons (see Section 7).	Medium: A separate air permit may be required for this equipment.	High level of emissions control required due to exposed waste.	Low	High: Reagent mix to make effective becomes cost prohibitive.	**Reject**

Table 8.5-2
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Tarry Waste
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Emissions Control	Sprung Structures (with vapor collection/treatment)	High: Highly effective in eliminating VOC and odor emission issues associated with waste disturbance.	Medium: A separate air permit may be required for this equipment.	Not applicable. Sprung structures are a means of controlling emissions from disturbed waste materials. Captured vapors from structure will be conveyed to treatment equipment such as VPGAC vessels.	Moderate to high implementability - technology is readily available and is effective in mitigating odor and VOC emissions from impacted waste during excavation.	High -compared to use of foam suppressants, water, etc. and not warranted.	**Reject**
	Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)	Moderate-High: Moderate to high effectiveness for immobilizing metals in waste matrix and improving handling characteristics.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Air emissions released during mixing and binding process - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to nature of waste materials and Site constraints.	Moderate	Retain
		Fluidization and Pumping -- High Pressure Shear Mixing or Hydroblasting	Moderate: Surfactant or solvent-like additives enable solids to flow freely in solution.	Low: Contaminated by-product water is problem.	Low to Moderate: Air emissions are released during mixing process, due to waste and/or amendments - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to Site constraints and mixing additives with waste.	Moderate - potentially cheaper than *in situ* stabilization and excavation.	Retain
		Ex situ Solvent Extraction -- Hot water biosurfactant/solvent	Low: Less effective for tarry waste. Undesirable water by-product.	Low: Contaminated by-product water is problem.	Low: Air emissions are low.	Low: Increased volume of waste due to contaminated water by-product.	Relatively high due to hot water needs.	**Reject**
	Disposal	Truck or Rail Transportation to Landfill	High: Highly effective, once waste handling characteristics are improved.	Low: Required emissions control (e.g., for dust) would be handled as part of general air permit for field operations.	Low: Only dust mitigation from trucks passing into and out of Site.	Moderate-High: Technology is readily available and is effective in removing wastes from the Site.	Compared with SIT, most cost effective option for small waste volumes.	Retain
		Slurry Injection Technology	High: Highly effective - particularly for readily slurried waste materials.	Very high: Would require issuance of a permit to install the well(s), which would be formidable given the Site history and proximity to a fault.	Very High: Due to several handling steps and slurrying of waste.	Low: Due to significant technical, regulatory, and public acceptance hurdles.	Not expected to be cost effective compared to offsite disposal at a landfill for small volumes of waste, but ok if with larger share of impacted soils.	Retain
Recycle	Asphalt Recycling	Asphalt Recycling	Low: Uncertain effectiveness for metals.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate level of control required. Air emissions released during process, final product with odors.	Very Low: Metals in solid waste make unimplementable.	Moderate	**Reject**

Table 8.5-3
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- CHP Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
No Action	None	None	Low: Does not achieve remedial action objectives.	None	None	High: Implementable because no action required.	No cost.	Retain (required by NCP)
Institutional Controls	Administrative Controls	Deed Restrictions	Moderate: Restrictions in land use will provide moderate protection.	NA	NA	High: Land owners (CHP) can readily implement.	Low	Retain
	Engineering Controls	Fencing	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
		Signs	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
Containment	Capping	Monolithic Soil Cap	Low-Moderate: Acts as a physical barrier to waste but not to water infiltration (except by evaporation) or upward migration of vapors from waste. Also subject to surface cracking/settling.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	Low to Moderate relative to Multilayer Cap, even if modified with vapor/leachate collection systems.	Retain
		Geomembrane Cap	Moderate	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.		Retain
		Multilayer Cap	High: Has features of a Monolithic Soil Cap plus protective liners to impede water infiltration/vapor migration. Also has collection and treatment systems for leachate and landfill gas.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	More expensive than Monolithic Soil Cap due to installation and maintenance of liners and engineered systems.	Retain
		RCRA-Equivalent Cap	Very High: Provides the most protection of all cap selections.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate: Depends on availability of cap materials, a more difficult task than for other caps due to additional layers.	Highest cost of capping options. Higher cost unjustified.	**Reject**

Table 8.5-3
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- CHP Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Containment	Vertical Barriers	Slurry Trench Cutoff Walls	No vertical barrier would be used for Site-wide solid waste without a cap, and any vertical barrier would be redundant to cap design.	--	--	--	--	**Reject**
		Grout Curtains	No vertical barrier would be used for Site-wide solid waste without a cap, and any vertical barrier would be redundant to cap design.	--	--	--	--	**Reject**
		Sheet Pile Cutoff Walls	No vertical barrier would be used for Site-wide solid waste without a cap, and any vertical barrier would be redundant to cap design.	--	--	--	--	**Reject**
	Horizontal Barriers	Liners	Low: No long-term effectiveness.	Low	Low	High	Low	**Reject**
	Sediment control barriers	Storm Water Containment	High: Storm water containment will also contain entrained solids.	Low	Low	High	Moderate	Retain
	Dust control	Revegetation	Moderate	Low	Low	Moderate: Revegetation possible with appropriate imported topsoils.	Low	**Reject**
		Capping	High: Capping would provide high protection against dust.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction during uncovering, movement and placement of waste materials under the cap.	High	High: Unwarranted for dust control alone.	**Reject**

Table 8.5-3
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- CHP Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation	High: Permanent removal of waste provides long-term solution.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate-High: Emissions control required due to exposed waste.	Moderate-High: some solid wastes will require mixing with soils or other means to enable handling/transport.	High: Transportation and disposal cost are significant.	Retain
	Emissions Control	Foam Suppressants	Moderate-High: Medium to High Effectiveness, although subsequent applications may be required if materials are disturbed/moved.	Foams do not require a specific permit to use.	NA: Foams are a means of controlling emissions from waste materials.	High: Technology is effective for on-spot control of VOC and odor emissions. Not a SCAQMD-approved treatment method for VOC impacted soils.	Very Low	Retain
		Ex situ Thermal Desorption	High	High: AQMD permit and requirements would be significant.	High level of emissions control required due to exposed waste and elevated temperatures.	Moderate	High -compared to use of foam suppressants, water, etc.	**Reject**
		Ex situ Chemical Oxidation	Low: Treatability testing showed ineffective for light-end hydrocarbons (see Section 7).	Medium: A separate air permit may be required for this equipment.	High level of emissions control required due to exposed waste.	Low	High: Reagent mix to make effective becomes cost prohibitive.	**Reject**
		Sprung Structures (with vapor collection/treatment)	High: Effective in eliminating VOC and odor emission issues associated with waste disturbance.	Medium: A separate air permit may be required for this equipment.	Not applicable. Sprung structures are a means of controlling emissions from disturbed waste materials. Captured vapors from structure will be conveyed to treatment equipment such as VPGAC vessels.	Moderate to high implementability - technology is readily available and is effective in mitigating odor and VOC emissions from impacted waste during excavation.	High -compared to use of foam suppressants, water, etc. and not warranted.	**Reject**
	Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)	Moderate-High: Moderate to high effectiveness for immobilizing metals in waste matrix and improving handling characteristics.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Air emissions released during mixing and binding process - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to nature of waste materials and Site constraints.	Moderate	Retain
		Fluidization and Pumping -- High Pressure Shear Mixing or Hydroblasting	Moderate: Surfactant or solvent-like additives enable solids to flow freely in solution.	Low: Contaminated by-product water is problem.	Low to Moderate: Air emissions are released during mixing process, due to waste and/or amendments - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to Site constraints and mixing additives with waste.	Moderate - potentially cheaper than *in situ* stabilization and excavation.	**Reject**

Table 8.5-3
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- CHP Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Treatment for Disposal	*Ex situ* Solvent Extraction -- Hot water biosurfactant/solvent	Low: Not effective for drilling mud waste. Undesirable water by-product.	Low: Contaminated by-product water is problem.	Low: Air emissions are low.	Low: Increased volume of waste due to contaminated water by-product.	Relatively high due to hot water needs.	**Reject**
	Disposal	Truck or Rail Transportation to Landfill	High: Highly effective, once waste handling characteristics are improved.	Low: Required emissions control (e.g., for dust) would be handled as part of general air permit for field operations.	Low: Only dust mitigation from trucks passing into and out of Site.	Moderate-High: Technology is readily available and is effective in removing wastes from the Site.	Compared with SIT, most cost effective option for small waste volumes.	Retain
		Slurry Injection Technology	High: Highly effective - particularly for readily slurried waste materials.	Very high: Would require issuance of a permit to install the well(s), which would be formidable given the Site history and proximity to a fault.	Very High: Due to several handling steps and slurrying of waste.	Low: Due to significant technical, regulatory, and public acceptance hurdles.	Potentially more cost effective than excavation and offsite landfill disposal for amenable wastes, notwithstanding makeup water and amendment requirements.	Retain
Recycle	Asphalt Recycling	Asphalt Recycling	Low: Uncertain effectiveness for metals.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate level of control required. Air emissions released during process, final product with odors.	Very Low: Metals in solid waste make unimplementable.	Moderate	**Reject**
	Debris Breaking/Crushing	Onsite Crushers	High: Abundant concrete debris can readily be broken and recycled for onsite or offsite use.	Low: Common process.	Moderate: Dust control needed.	High: Readily implementable as demonstrated during EA. Must locate crusher(s) away from homes due to noise.	Low	Retain

Table 8.5-4
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- City Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
No Action	None	None	Low: Does not achieve remedial action objectives.	None	None	High: Implementable because no action required.	No cost.	Retain (required by NCP)
Institutional Controls	Administrative Controls	Deed Restrictions	Moderate: Restrictions in land use will provide moderate protection.	NA	NA	Low: Parcel not owned by RPs.	Low	**Reject**
	Engineering Controls	Fencing	Low: Fencing unacceptable in future uses.	NA	NA	Low: Exists at Site already, but unacceptable for future uses.	Low	**Reject**
		Signs	Low: Signage unacceptable in future uses.	NA	NA	Low: Signage unacceptable in future uses.	Low	**Reject**
Containment	Capping	Monolithic Soil Cap	--	--	--	Low: Incompatible with future land use.	--	**Reject**
		Geomembrane Cap	--	--	--	Low: Incompatible with future land use.	--	**Reject**
		Multilayer Cap	--	--	--	Low: Incompatible with future land use.	--	**Reject**
		RCRA-Equivalent Cap	--	--	--	Low: Incompatible with future land use.	--	**Reject**
	Vertical Barriers	Slurry Trench Cutoff Walls	Would only be used with a cap, and cap is incompatible with future land use.	--	--	--	--	**Reject**
		Grout Curtains	Would only be used with a cap, and cap is incompatible with future land use.	--	--	--	--	**Reject**
		Sheet Pile Cutoff Walls	Would only be used with a cap, and cap is incompatible with future land use.	--	--	--	--	**Reject**
	Horizontal Barriers	Liners	Low: No long-term effectiveness.	Low	Low	Low: Incompatible with future land use.	--	**Reject**
	Sediment control barriers	Storm Water Containment	High: Storm water containment will also contain entrained solids.	Low	Low	Low: Difficult to contain storm water due to narrow and long shape of parcel.	Moderate	**Reject**
	Dust control	Revegetation	Moderate	Low	Low	Moderate: Revegetation possible with appropriate imported topsoils.	Low	**Reject**
		Capping	High: Capping would provide high protection against dust.	--	--	Low: Incompatible with future land use.	--	**Reject**

Table 8.5-4
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- City Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation	High: Permanent removal of waste provides long-term solution.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate-High: Emissions control required due to exposed waste.	Moderate-High: some solid wastes may require mixing with soils or other means to enable handling/transport.	High: Transportation and disposal cost are significant.	Retain
	Emissions Control	Foam Suppressants	Moderate-High: Medium to High Effectiveness, although subsequent applications may be required if materials are disturbed/moved.	Foams do not require a specific permit to use.	NA: Foams are a means of controlling emissions from waste materials.	High: Technology is effective for on-spot control of VOC and odor emissions. Not a SCAQMD-approved treatment method for VOC impacted soils.	Very Low	Retain
		Ex situ Thermal Desorption	High	High: AQMD permit and requirements would be significant.	High level of emissions control required due to exposed waste and elevated temperatures.	Moderate	High -compared to use of foam suppressants, water, etc.	**Reject**
		Ex situ Chemical Oxidation	Low: Treatability testing showed ineffective for light-end hydrocarbons (see Section 7).	Medium: A separate air permit may be required for this equipment.	High level of emissions control required due to exposed waste.	Low	High: Reagent mix to make effective becomes cost prohibitive.	**Reject**
		Sprung Structures (with vapor collection/treatment)	High: Effective in eliminating VOC and odor emission issues associated with waste disturbance.	Medium: A separate air permit may be required for this equipment.	NA: Sprung structures are a means of controlling emissions from disturbed waste materials. Captured vapors from structure will be conveyed to treatment equipment such as VPGAC vessels.	Moderate to high implementability - technology is readily available and is effective in mitigating odor and VOC emissions from impacted waste during excavation.	High -compared to use of foam suppressants, water, etc.	**Reject**
	Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)	Moderate-High: Moderate to high effectiveness for immobilizing metals in waste matrix and improving handling characteristics.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Air emissions released during mixing and binding process - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to nature of waste materials and Site constraints.	Moderate	Retain
		Fluidization and Pumping -- High Pressure Shear Mixing or Hydroblasting	Moderate: Surfactant or solvent-like additives enable solids to flow freely in solution.	Low: Contaminated by-product water is problem.	Low to Moderate: Air emissions are released during mixing process, due to waste and/or amendments - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to Site constraints and mixing additives with waste.	Moderate - potentially cheaper than *in situ* stabilization and excavation.	**Reject**

Table 8.5-4
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Solid Waste -- City Parcel
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria: Effectiveness	Screening Criteria: Implementability – Complexity	Screening Criteria: Implementability – Level of Emissions Control Required	Screening Criteria: Implementability – Overall	Screening Criteria: Relative Cost	Screening Result
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Treatment for Disposal	*Ex situ* Solvent Extraction -- Hot water biosurfactant/solvent	Low: Not effective for drilling mud waste. Undesirable water by-product.	Low: Contaminated by-product water is problem.	Low: Air emissions are low.	Low: Increased volume of waste due to contaminated water by-product.	Relatively high due to hot water needs.	**Reject**
	Disposal	Truck or Rail Transportation to Landfill	High: Highly effective, once waste handling characteristics are improved.	Low: Required emissions control (e.g., for dust) would be handled as part of general air permit for field operations.	Low: Only dust mitigation from trucks passing into and out of Site.	Moderate-High: Technology is readily available and is effective in removing wastes from the Site.	Compared with SIT, most cost effective option for small waste volumes.	Retain
		Slurry Injection Technology	High: Highly effective - particularly for readily slurried waste materials.	Very high: Would require issuance of a permit to install the well(s), which would be formidable given the Site history and proximity to a fault.	Very High: Due to several handling steps and slurrying of waste.	Low: Due to significant technical, regulatory, and public acceptance hurdles.	Potentially more cost effective than excavation and offsite landfill disposal for amenable wastes, notwithstanding makeup water and amendment requirements.	Retain
Recycle	Asphalt Recycling	Asphalt Recycling	Low: Uncertain effectiveness for metals.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate level of control required. Air emissions released during process, final product with odors.	Very Low: Metals in solid waste make unimplementable.	Moderate	**Reject**
	Debris Breaking/Crushing	Onsite Crushers	High: Abundant concrete debris can readily be broken and recycled for offsite use (e.g., CHP Parcel).	Low: Common process.	Moderate: Dust control needed.	High: Readily implementable as demonstrated during EA. Must locate crusher(s) away from homes due to noise.	Low	Retain

Table 8.5-5
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Pit F and Pit F-Impacted Soils
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
No Action	None	None	Low: Does not achieve remedial action objectives.	None	None	High: Implementable because no action required.	No cost.	Retain (required by NCP)
Institutional Controls	Administrative Controls	Deed Restrictions	Moderate: Restrictions in land use will provide moderate protection.	NA	NA	High: Land owners (CHP) can readily implement.	Low	Retain
	Engineering Controls	Fencing	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
		Signs	Moderate: Provides only moderate protection due to trespassers.	NA	NA	High: Exists at Site already.	Low	Retain
Containment	Capping	Monolithic Soil Cap	Low: Waste has migrated to groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	Low to Moderate relative to Multilayer Cap, even if modified with vapor/leachate collection systems.	**Reject**
		Geomembrane Cap	Low: Waste has migrated to groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.		**Reject**
		Multilayer Cap	Low: Waste has migrated to groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate to High: Depends on availability of cap materials.	More expensive than Monolithic Soil Cap due to installation and maintenance of liners and engineered systems.	**Reject**
		RCRA-Equivalent Cap	Low: Waste has migrated to groundwater.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Emissions control may be required during cap construction.	Moderate: Depends on availability of cap materials, a more difficult task than for other caps due to additional layers.	Highest cost of capping options. Higher cost unjustified.	**Reject**
	Vertical Barriers	Slurry Trench Cutoff Walls	Moderate: Could be used in conjunction with a local cap.	Low	High: Trenching would require a high level of control due to strong odor of Pit F waste.	Low: Waste too deep below grade to implement.	Moderate	**Reject**
		Grout Curtains	Moderate: Moderately effective for tarry, flowable waste. Could be used in conjunction with a local cap.	Low	Low	Low: Waste depth below grade makes difficult to implement.	Moderate	**Reject**
		Sheet Pile Cutoff Walls	Low: Ineffective for tarry, flowable waste.	--	--	--	--	**Reject**

Table 8.5-5
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Pit F and Pit F-Impacted Soils
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria					
			Effectiveness	Implementability			Relative Cost	Screening Result
				Complexity	Level of Emissions Control Required	Overall		
Containment	Horizontal Barriers	Liners	Low: No long-term effectiveness.	Low	Low	High	Low	**Reject**
	Sediment control barriers	Storm Water Containment	High: Storm water containment will also contain entrained solids.	Low	Low	High	Moderate	Retain
	Dust control	Revegetation	Moderate	Low	Low	Moderate: Revegetation possible with appropriate imported topsoils.	Low	**Reject**
		Capping	High: Capping would provide high protection against dust.	Low: Required emissions control would be handled as part of general air permit for field operations.	High: Emissions control will be required during cap construction.	High	High: Unwarranted for dust control alone.	**Reject**
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation	High: Permanent removal of waste provides long-term solution.	Low: Required emissions control would be handled as part of general air permit for field operations.	High: Emissions control required due to exposed waste with strong odor.	Moderate-High: Pit F waste will require mixing with soils or other means to enable handling/transport.	High: Transportation and disposal cost are significant.	Retain
	Emissions Control	Foam Suppressants	Moderate-High: Medium to High Effectiveness, although subsequent applications may be required if materials are disturbed/moved.	Foams do not require a specific permit to use.	NA: Foams are a means of controlling emissions from waste materials.	High: Technology is effective for on-spot control of VOC and odor emissions. Not a SCAQMD-approved treatment method for VOC impacted soils.	Very Low	Retain
		Ex situ Thermal Desorption	Low: No evidence of effectiveness for Pit F waste.	High: AQMD permit and requirements would be significant.	High: Emissions control required due to exposed waste with strong odor.	Moderate	High -compared to use of foam suppressants, water, etc.	**Reject**
		Ex situ Chemical Oxidation	Low: Treatability testing showed ineffective for light-end hydrocarbons (see Section 7).	Medium: A separate air permit may be required for this equipment.	High: Emissions control required due to exposed waste with strong odor.	Low	High: Reagent mix to make effective becomes cost prohibitive.	**Reject**
		Sprung Structures (with vapor collection/treatment)	High: Effective in eliminating VOC and odor emission issues associated with waste disturbance.	Medium: A separate air permit may be required for this equipment.	Not applicable. Sprung structures are a means of controlling emissions from disturbed waste materials. Captured vapors from structure will be conveyed to treatment equipment such as VPGAC vessels.	Moderate to high implementability - technology is readily available and is effective in mitigating odor and VOC emissions from impacted waste during excavation.	High -compared to use of foam suppressants, water, etc. Strong odors of Pit F and Pit F-impacted waste and proximity to homes make the high cost acceptable.	Retain

Table 8.5-5
Presentation and Preliminary Screening of Remedial Technology Types and Process Options for Pit F and Pit F-Impacted Soils
Ascon Landfill Site

General Response Action	Remedial Technology Types	Process Options	Screening Criteria: Effectiveness	Screening Criteria: Implementability – Complexity	Screening Criteria: Implementability – Level of Emissions Control Required	Screening Criteria: Implementability – Overall	Screening Criteria: Relative Cost	Screening Result
Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)	Moderate-High: Moderate to high effectiveness for improving handling characteristics.	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate: Air emissions released during mixing and binding process - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to nature of waste materials and Site constraints.	Moderate	Retain
		Fluidization and Pumping -- High Pressure Shear Mixing or Hydroblasting	Moderate: Surfactant or solvent-like additives enable solids to flow freely in solution.	Low: Contaminated by-product water is problem.	Low to Moderate: Air emissions are released during mixing process, due to waste and/or amendments - certain mitigative steps can be performed.	Moderate level of difficulty to implement, primarily due to Site constraints and mixing additives with waste.	Moderate - potentially cheaper than *in situ* stabilization and excavation.	**Reject**
		Ex situ Solvent Extraction -- Hot water biosurfactant/solvent	Low: Not tested for Pit F waste. Undesirable water by-product.	Low: Contaminated by-product water is problem.	Low: Air emissions are low.	Low: Increased volume of waste due to contaminated water by-product.	Relatively high due to hot water needs.	**Reject**
	Disposal	Truck or Rail Transportation to Landfill	High: Highly effective, once waste handling characteristics are improved.	Low: Required emissions control (e.g., for dust) would be handled as part of general air permit for field operations.	Low: Only dust mitigation from trucks passing into and out of Site.	Moderate-High: Technology is readily available and is effective in removing wastes from the Site.	Compared with SIT, most cost effective option for small waste volumes.	Retain
		Slurry Injection Technology	High: Highly effective - particularly for readily slurried waste materials.	Very high: Would require issuance of a permit to install the well(s), which would be formidable given the Site history and proximity to a fault. The Pit F waste is non-petroleum, which may make disposal by SIT infeasible to permit.	Very High: Due to several handling steps, slurrying of waste, and strong odors of waste.	Low: Due to significant technical, regulatory, and public acceptance hurdles.	Not expected to be cost effective compared to offsite disposal at a landfill for small volumes of waste.	**Reject**
Recycle	Asphalt Recycling	Asphalt Recycling	Low	Low: Required emissions control would be handled as part of general air permit for field operations.	Moderate level of control required. Air emissions released during process, final product with odors.	Very Low: Odors from waste make unimplementable.	Moderate	**Reject**
	Debris Breaking/Crushing	Onsite Crushers	High: Abundant concrete debris can readily be broken and recycled for offsite use (e.g., CHP Parcel).	Low: Common process.	Moderate: Dust control needed.	High: Readily implementable as demonstrated during EA. Must locate crusher(s) away from homes due to noise.	Low	Retain

Table 8.5-6
Cap Components
Ascon Landfill Site

	Monolithic Soil Cap (retained)	Geomembrane Cap (retained)	RCRA-Equivalent Cap (retained)	RCRA Cap (rejected)
Soil cover (~4', vegetative)	X	X	X	X
Filter geotextile (keep soil out of crushed concrete)		X	X	X
Crushed concrete (biotic barrier, drainage)	X	X	X	
Bentonite/clay layer (gas/liquid low permeability)				X
Geosynthetic clay liner (GCL, gas/liquid low permeability)			X	
Cushion geotextile (e.g., VFPE, hold crushed concrete in place)		X	X	X
Geomembrane (gas/liquid barrier)		X	X	X
Vapor collection	X	X	X	X
Foundation layer	X	X	X	X

Table 9.2-1
Summary of Components of Remedial Alternatives
Ascon Landfill Site

Components of Remedy Alternatives	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap[1]	Alt. 5 Source Removal (with Offsite Disposal and SIT)	Alt. 6 Source Removal (with Offsite Disposal)
Deed Restriction(s)		●	●	●	❍	❍
Remove Waste from City Parcel			●	●	●	●
Remove Pit F Area Wastes		●	●	●	●	●
Remove Tarry Liquids in Lagoons 1, 2, and 3		●	●	●	●	●
Remove Lagoon 4 and 5 Wastes (Partial or Complete)			●	●	●	●
Remove Pits A-E, G, and H				●	●	●
Remove All Waste					●	●
Deal with Pacific Ranch #1 oil well and AW-6,7 groundwater wells		●	●	●	●	●
Cap			●	●		
Long-Term Groundwater Monitoring		●	●	●	❍	❍

[1] Note: Pits A-E, G, and H may be removed during Alt. 4, depending on the source removal area for the final remedial design.

● = component
❍ = potential component, pending on post-remedy conditions

Table 9.2-2
Summary of Process Options Incorporated into Alternatives
Ascon Landfill Site

Media	General Response Action	Remedial Technology Types	Process Options	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Groundwater	No Action	None	None	●					
	Institutional Controls	Administrative Controls	Deed Restrictions		●	●	●	❍	❍
	Monitoring	Monitoring	Monitoring		●	●	●	●	●
	Containment	Capping	Monolithic Soil Cap			●	●		
			Geomembrane Cap			●	●		
			RCRA-Equivalent Cap			●	●		
	Collection/Treatment/Discharge	Collection	Interceptor Trenches w/ Pumps		❍	❍	❍	❍	❍
			Wells		❍	❍	❍	❍	❍
			Vapor Control Systems			●	●		
			Excavation (Pit F-impacted groundwater)		●	●	●	●	●
		Ex Situ Treament	Granular Activated Carbon Filtration			●	●	●	●
			Oil/Water Separation			●	●	●	●
		Discharge	Onsite Discharge to Ground			●	●	●	●
			Offsite Discharge to Storm Drain or Sanitary Sewer (POTW)			●	●	●	●
			Offsite NAPL/Groundwater Disposal to Landfill (with Treatment)			●	●	●	●
	In Situ Treatment	In Situ Treatment	Chemical Oxidation					❍	❍
			Natural Attenuation/Bioremediation - Enhanced with Addition of Oxygen or other Ammendments					❍	❍
Tarry Waste (Lagoons 1 to 3)	No Action	None	None	●					
	Institutional Controls	Administrative Controls	Deed Restrictions		●	●	●		
		Engineering Controls	Fencing		●	●	●	●	●
			Signs		●	●	●	●	●
	Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation		●	●	●	●	●
		Emissions Control	Foam Suppressants		●	●	●	●	●
		Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)		●	●	●	●	●
			Fluidization and Pumping -- High Pressure Shear Mixing or Hydroblasting		●	●	●	●	●
		Disposal	Truck or Rail Transportation to Landfill		●	●	●	●	●
Solids (CHP)	No Action	None	None	●					
	Institutional Controls	Administrative Controls	Deed Restrictions		●	●	●	❍	❍
		Engineering Controls	Fencing		●	●	●	●	●
			Signs		●	●	●	●	●
	Containment	Capping	Monolithic Soil Cap			●	●		
			Geomembrane Cap			●	●		
			RCRA-Equivalent Cap			●	●		
		Sediment control barriers	Storm Water Containment		●	●	●		

Table 9.2-2
Summary of Process Options Incorporated into Alternatives
Ascon Landfill Site

Media	General Response Action	Remedial Technology Types	Process Options	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Solids (CHP), cont.	Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation			●	●	●	●
		Emissions Control	Foam Suppressants			●	●	●	●
		Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)			●	●	●	●
		Disposal	Truck or Rail Transportation to Landfill			●	●	●	●
			Slurry Injection Technology					●	
	Recycle	Debris Breaking/Crushing	Onsite Crushers			●	●	●	●
Solids (City)	No Action	None	None	●					
	Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation			●	●	●	●
		Emissions Control	Foam Suppressants			●	●	●	●
		Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)			●	●	●	●
		Disposal	Truck or Rail Transportation to Landfill			●	●	●	●
			Slurry Injection Technology					●	
	Recycle	Debris Breaking/Crushing	Onsite Crushers			●	●	●	●
Pit F Waste and Pit F-Impacted Soils	No Action	None	None	●					
	Institutional Controls	Administrative Controls	Deed Restrictions		❍	❍	❍	❍	❍
		Engineering Controls	Fencing		❍	❍	❍	❍	❍
			Signs		❍	❍	❍	❍	❍
	Containment	Sediment control barriers	Storm Water Containment		●	●	●	●	●
	Removal/Treatment (emissions reduction and disposal preparation)/Disposal	Removal	Excavation		●	●	●	●	●
		Emissions Control	Foam Suppressants		●	●	●	●	●
			Sprung Structures (with vapor collection/treatment)		●	●	●	●	●
		Treatment for Disposal	Cement, Fly Ash or other Stabilizing Agent (e.g., soil)		●	●	●	●	●
		Disposal	Truck or Rail Transportation to Landfill		●	●	●	●	●

Notes:
Alternative 1 - No Response Action
Alternative 2 - Limited Waste Removal
Alternative 3 - Protective Cap
Alternative 4 - Partial Source Removal with Protective Cap
Alternative 5 - Source Removal with Offsite Disposal and SIT
Alternative 6 - Source Removal with Offsite Disposal

● = process is component
❍ = process is potential component, pending on post-remedy conditions

Table 9.3-1
Evaluation Criteria and Considerations for Alternatives
Ascon Landfill Site

Nine NCP Criteria	Considerations
Overall Protection of Human Health and the Environment	Protection of Human Health
	Protection of the Environment
Compliance with ARARs	Compliance with chemical-specific, action-specific, and location-specific ARARs and other criteria, advisories, and guidance
Long-term Effectiveness and Permanence	Magnitude of residual risk
	Adequacy and reliability of controls
	Approximate volume of wastes remaining at the Site
Reductions in Toxicity, Mobility, and Volume Through Treatment	Treatment process used and materials treated
	Amount of hazardous materials destroyed or treated
	Expected reductions in toxicity, mobility, and volume
	Degree to which treatment is irreversible
	Type and quantity of residuals remaining after treatment
Short-term Effectiveness	Protection of community during remedial actions
	Protection of workers during remedial actions
	Environmental impacts
	Time until remedial action objectives are achieved
	Approximate # of truck trips required (waste + imported soils)
	Level of needed air emissions control during removal and handling
Implementability	Ability to construct and operate the technology
	Availability of goods and services
	Reliability of the technology
	Ease of undertaking additional remedial actions
	Ability to monitor effectiveness of remedy
	Ability to obtain approval from agencies
	Coordination with other agencies
	Availability of offsite treatment, storage, and disposal (TSD) services and capacities
Cost	Present Worth costs
State Acceptance	DTSC acceptance of preferred remedy for the Site
Community Acceptance	Community acceptance of preferred remedy for the Site

Table 9.5-1
Summary of Evaluation of Alternatives
Ascon Landfill Site

Detailed Evaluation Criteria		Alternative 1 [1]	Alternative 2 [1]	Alternative 3	Alternative 4	Alternative 5 [4]	Alternative 6
Nine NCP Criteria	**Considerations**	**No Action**	**Limited Waste Removal**	**Protective Cap [2]**	**Partial Source Removal with Protective Cap [3]**	**Source Removal with Offsite Disposal and SIT**	**Source Removal with Offsite Disposal**
Overall Protection of Human Health and the Environment	Protection of human health	Does not provide.	Does not provide.	Encapsulation of waste minimizes the mobility and transport of contaminants and the potential for human contact.	Encapsulation of waste minimizes the mobility and transport of contaminants and potential for human contact. A portion of waste materials closest to offsite receptors will be removed and disposed offsite. Remediation of groundwater/vapor mitigation as required.	Potential waste migration and human exposure greatly reduced by complete source removal of all waste materials except those that can be recycled onsite. Groundwater remediation/vapor mitigation as required.	Potential waste migration and human exposure greatly reduced by complete source removal of all waste materials except those that can be recycled onsite. Groundwater remediation/vapor mitigation as required.
	Protection of the environment	Does not provide.	Does not provide.	Encapsulation of waste minimizes the mobility and transport of contaminants and the potential for impacts to the external environment.	Encapsulation of waste minimizes the mobility and transport of contaminants and potential for impacting the environment. A portion of waste materials closest to offsite receptors will be removed and disposed offsite. Remediation of groundwater/vapor mitigation as required.	Potential waste migration and ecological exposure greatly reduced by complete source removal of all waste materials except those that can be recycled onsite. Groundwater remediation/vapor mitigation as required.	Potential waste migration and ecological exposure greatly reduced by complete source removal of all waste materials except those that can be recycled onsite. Groundwater remediation/vapor mitigation as required.
Compliance with ARARs	Compliance with chemical-specific ARARs	Does not comply.	Does not comply.	Will comply. A portion of waste will be removed offsite and remaining impacted materials will be encapsulated. Groundwater remediation/vapor mitigation as required.	Will comply. A portion of waste will be removed offsite and remaining impacted materials will be encapsulated. Groundwater remediation/vapor mitigation as required.	Will comply. Source removal of unacceptable waste materials and groundwater remediation/vapor mitigation as required.	Will comply. Source removal of unacceptable waste materials and groundwater remediation/vapor mitigation as required.
	Compliance with action-specific ARARs	Does not apply.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.
	Compliance with location-specific ARARs	Does not apply.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.
	Compliance with to-be-considered ARARs and other criteria, advisories and guidance	Does not apply.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.	Remedy construction and waste management activities will be in compliance.
Long-term Effectiveness and Permanence	Magnitude of residual risk			High	Moderate to High	Low	Very Low
	Adequacy and reliability of controls			Moderate to High	Moderate to High	Moderate to High	High
	Approximate volume of wastes remaining at the Site			High	Moderate to High	Low	Low

Table 9.5-1
Summary of Evaluation of Alternatives
Ascon Landfill Site

Detailed Evaluation Criteria		Alternative 1 [1]	Alternative 2 [1]	Alternative 3	Alternative 4	Alternative 5 [4]	Alternative 6
Nine NCP Criteria	**Considerations**	**No Action**	**Limited Waste Removal**	**Protective Cap [2]**	**Partial Source Removal with Protective Cap [3]**	**Source Removal with Offsite Disposal and SIT**	**Source Removal with Offsite Disposal**
Reductions in Toxicity, Mobility, and Volume Through Treatment	Treatment process used and materials treated			Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.
	Amount of hazardous substances destroyed or treated			Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.	Limited to stabilization of impacted materials prior to reuse and offsite treatment by disposal facility.
	Expected reductions in toxicity, mobility and volume			High reduction in mobility due to encapsulation. Slight (about 10%) reduction in volume due to offsite disposal.	High reduction in mobility due to encapsulation and low reduction in volume due to offsite disposal.	High reduction in volume due to offsite disposal in deep injection wells and landfill/recycling facilities.	High reduction in volume due to offsite disposal in landfill/recycling facilities.
	Degree to which treatment is irreversible			Stabilization treatment has a high degree of irreversibility since metals are bounded in a matrix that is resistant to chemical and physical changes.	Stabilization treatment has a high degree of irreversibility since metals are bounded in a matrix that is resistant to chemical and physical changes.	Stabilization treatment has a high degree of irreversibility since metals are bounded in a matrix that is resistant to chemical and physical changes.	Stabilization treatment has a high degree of irreversibility since metals are bounded in a matrix that is resistant to chemical and physical changes.
	Type and quantity of residuals remaining after treatment			Quantity of residuals is high - over 90% of waste materials are encapsulated onsite. Encapsulated wastes include impacted native and fill materials, drilling muds, and construction debris.	Quantity of residuals is high - more than 85% of waste materials are encapsulated onsite. Encapsulated wastes include impacted native materials and fill, drilling muds, and construction debris.	Quantity of residuals is low due to source removal through offsite disposal. Residuals will include some minimally impacted native materials and fill.	Quantity of residuals is low due to source removal through offsite disposal. May include some minimally impacted native materials and fill.
Short-term Effectiveness	Protection of community during remedial actions			Yes - use of foam suppressants, water spray, and/or sprung structures will be used as needed. Also, perimeter air monitoring will be conducted to mitigate offsite impacts.	Yes - use of foam suppressants, water spray, and/or sprung structures will be used as needed. Also, perimeter air monitoring will be conducted to mitigate offsite impacts.	Yes - use of foam suppressants, water spray, and/or sprung structures will be used as needed. Also, perimeter air monitoring will be conducted to mitigate offsite impacts.	Yes - use of foam suppressants, water spray, and/or sprung structures will be used as needed. Also, perimeter air monitoring will be conducted to mitigate offsite impacts.
	Protection of workers during remedial actions			Yes. Workers will use proper PPE, receive Health and Safety and site-specific training, and air monitoring (at work face and Site perimeter) will be conducted.	Yes. Workers will use proper PPE, receive Health and Safety and site-specific training, and air monitoring (at work face and Site perimeter) will be conducted.	Yes. Workers will use proper PPE, receive Health and Safety and site-specific training, and air monitoring (at work face and Site perimeter) will be conducted.	Yes. Workers will use proper PPE, receive Health and Safety and site-specific training, and air monitoring (at work face and Site perimeter) will be conducted.
	Environmental impacts			Above measures will be taken to minimize offsite air emissions and releases. Clay layer will not be breached during excavation of Lagoons 4 and 5.	Above measures will be taken to minimize offsite air emissions and releases. Clay layer will not be breached in source removal areas.	Above measures will be taken to minimize offsite air emissions and releases. Clay layer will not be breached in source removal areas.	Above measures will be taken to minimize offsite air emissions and releases. Clay layer will not be breached in source removal areas.
	Time until remedial action objectives are achieved			1.5 to 2 Years	2.25 to 3 Years	6 to 9 Years	5.25 to 6 Years
	Approximate # of truck trips required (waste + imported soils)			Moderate	Moderate	High	Very High
	Level of air emissions control during removal and handling			Low	Low to Moderate	High - due to additional steps required to slurry waste.	High
Implementability	Ability to construct and operate the technology			Moderate to highly implementable, depending on availability of cap materials, trucks. Technologies are proven, off-the-shelf.	Moderate to highly implementable, depending on availability of cap materials, trucks. Technologies are proven, off-the-shelf.	Low implementability due to significant technical, regulatory, and public perception hurdles.	Moderate to highly implementable. Technologies are proven, off-the-shelf. Depends on availability of trucks and backfill.

Table 9.5-1
Summary of Evaluation of Alternatives
Ascon Landfill Site

Detailed Evaluation Criteria		Alternative 1 [1]	Alternative 2 [1]	Alternative 3	Alternative 4	Alternative 5 [4]	Alternative 6
Nine NCP Criteria	**Considerations**	**No Action**	**Limited Waste Removal**	**Protective Cap [2]**	**Partial Source Removal with Protective Cap [3]**	**Source Removal with Offsite Disposal and SIT**	**Source Removal with Offsite Disposal**
	Availability of goods and services			Moderate - due to cap materials, trucks.	Moderate - due to cap materials, trucks.	Relatively low - requires permitting, siting and installation of deep injection wells, significant makeup water and amendments for slurrying wastes, etc.	Low to Moderate - depends on availability of trucks.
	Reliability of the technology			High	High	High	High
	Ease of undertaking additional remedial actions			Moderate - would need to remove cap for complete source removal.	Moderate - would need to remove cap for complete source removal.	None Required except minimal long-term O&M.	None required except minimal long-term O&M.
	Ability to monitor effectivenss of remedy			Moderate to High	Moderate to High	Moderate to High	High
	Ability to obtain approval from agencies			Moderate	Moderate to High	Low to Very Low	High
	Coordination with other agencies			Moderate	Moderate to High	Low to Very Low	High
	Availability of offsite treatment, storage, and disposal (TSD) services and capacities			Moderate to High	Moderate to High	Moderate to High	Low to Moderate (Truck and Landfill Capacity Issues)
Cost	Present worth costs			Moderate	Moderate	High	Very High
State Acceptance	DTSC acceptance of preferred remedy for the Site			TBD	TBD	TBD	TBD
Community Acceptance	Community acceptance of preferred remedy for the Site			TBD	TBD	TBD	TBD

Notes:

N/A - Not Applicable
TBD - To Be Determined

[1] Since these alternatives do not meet the "Threshold" criteria, they are immediately rejected from further consideration and do not require further evaluation.

[2] Ratings and metrics are based on assuming a range between implementing a 38-acre Monolithic Soil Cap and a 38-acre Multilayer Cap, for which detailed estimates were developed (Appendix R).

[3] Ratings based on assuming a 38-acre Multilayer Cap will be installed.

[4] As described in Section 9.5.5, Alternative 5 was rejected due to Short-term Effectiveness and Implementability considerations.

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
Chemical-Specific ARARs (Table 5.2-1)						
Clean Air Act (CAA) a. National Primary and Secondary Ambient Air Quality Standards (NAAQS) b. National Emissions Standards for Hazardous Air Pollutants (NESHAP)	Will meet	Will meet	Will meet	Will meet	Will meet	Will meet
Clean Water Act (CWA) a. National Primary and Secondary Drinking Water Standards	Will not meet	Will not meet	Will meet MCLs with time	Will meet MCLs with time	Will meet MCLs with time	Will meet MCLs with time
Resource Conservation and Recovery Act (RCRA)	Will meet	Will meet	Will meet	Will meet	Will meet	Will meet
Water Quality Control Plan Santa Ana River Basin, 1995 (Basin Plan) Updated Resolution to Santa Ana River Basin, 2004	Will not meet	Will not meet	Will meet (no further degradation of groundwater)	Will meet (no further degradation of groundwater)	Will meet (no further degradation of groundwater)	Will meet (no further degradation of groundwater)
Domestic Water Quality and Monitoring Regulations	Will not meet	Will not meet	Will meet	Will meet	Will meet	Will meet

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ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
California Safe Drinking Water and Toxic Enforcement Act of 1986	Will meet	Will meet	Will meet	Will meet	Will meet	Will meet
Hazardous Waste Control Act (HWCA), as administered by the Department of Toxic Substances Control (DTSC) a. Criteria for Identifying Characteristics of Hazardous Wastes b. Categories of Hazardous Waste c. Land Disposal Restrictions (LDRs)	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Air Toxic "Hot Spot" Act, as implemented by the South Coast Air Quality Management District (SCAQMD) and administered by the California Air Resources Board.	Will meet	Will meet	Will meet	Will meet	Will meet	Will meet
California Integrated Waste Management Board regulations for solid waste	Will not meet	Will meet	Will meet	Will meet	Will meet	Will meet
Action-Specific ARARs (Table 5.2-2)						
National Pollutant	NA	Will meet	Will meet	Will meet	Will meet	Will meet

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
Discharge Elimination System (NPDES) under the CWA						
Underground Injection Control	NA	NA	NA	NA	Will meet	NA
RCRA Section 3020(b)	NA	NA	NA	NA	NA	NA
Spill Prevention Control and Countermeasure (SPCC) under the CWA	NA	Will meet	Will meet	Will meet	Will meet	Will meet
National Oil and Hazardous Substances Pollution Contingency Plan (NCP)	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Department of Transportation (DOT) Hazardous Material Act Regulations	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Federal Occupational Health and Safety Act	NA	Will meet	Will meet	Will meet	Will meet	Will meet
National Pollutant Discharge Elimination System Permit as managed by the SWRCB	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Discharges of Hazardous Waste to Land	NA	NA	Will meet	Will meet	NA	NA
Hazardous Waste Control Act (HWCA) a. Standards for Generators of Hazardous Waste b. Accumulation of Hazardous Waste	NA	Will meet	Will meet	Will meet	Will meet	Will meet

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
c. Analysis of hazardous waste d. Storage of Hazardous Waste e. Standards for Transporters of Hazardous Waste f. Hazardous Materials Release Response Plan and Inventory						
Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities a. Closure and Post-Closure Requirements b. Environmental Performance Standards for Miscellaneous Units c. Staging Piles d. Corrective Action Management Units (CAMU) e. Thermal Treatment Units	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Requirements for Design and Operation of Landfills	NA	Will meet	Will meet	Will meet	NA	NA
Municipal Solid Waste Landfill (MSWLF) Closure	NA	Will meet	Will meet	Will meet	NA	NA

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
California Integrated Waste Management Board	NA	Will meet	Will meet	Will meet	NA	NA
Division of Oil and Gas	NA	NA	NA	NA	Will meet	NA
California Vehicle Code	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Mulford-Carrell Air Resources Act as implemented by the South Coast Air Quality Management District (SCAQMD) and administered by the Air Resources Board (CARB)	NA	Will meet	Will meet	Will meet	Will meet	Will meet
SCAQMD Rules and Regulations a. Permits (1) Permits to Construct (Rule 201) (2) Permit to Operate (Rule 203) b. Prohibitory Rules (1) Visible Emissions (Rule 401) (2) Nuisance (Rule 402) (3) Fugitive Dust (Rule 403) (4) Particulate Matter (Rule 404) (5) Solid Particulate Matter (Rule 405) (6) Liquid and Gaseous Air Contaminants (Rule 407) (7) Circumvention (Rule 408) (8) Fuel Combustion Contaminants (Rule 409) (9) Sulfur Contents of Gaseous, Liquid, or Fossil Fuels (Rule 431) (10) Fuel Burning Equipment (Rule 474)	NA	Will meet	Will meet	Will meet	Will meet	Will meet

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
c. Source-Specific Standards (1) Excavation of Landfill Sites (Rule 1150) (2) Volatile Organic Compound (VOC) Emissions from Decontamination of Soil (Rule 1166) d. New Source Review of Carcinogenic Air Contaminants (Rule 1401)						
California Occupational Safety and Health Act (CalOSHA)	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Location-Specific ARARs (Table 5.2-3)						
Municipal Solid Waste Landfill Closure						
Underground Injection Control	NA	NA	NA	NA	Will meet	NA
Endangered Species Act	NA	NA	NA	NA	NA	NA
Migratory Bird Treaty Act	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Fish and Wildlife Coordination Act	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Coastal Zone Management Act	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Standards for Owners and Operators of Transfer, Treatment, Storage, and Disposal Facilities	NA	Will meet	Will meet	Will meet	NA	NA
Seismic Zone	NA	Will meet	Will meet	Will meet	NA	NA
California Coastal Act	NA	Will meet	Will meet	Will meet	Will meet	Will meet
California Endangered Species Act as implemented by the	NA	NA	NA	NA	NA	NA

Table 9.5-2
ARARs Analysis
Ascon Landfill Site

Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
California Department of Fish and Game						
To-Be-Considered ARARs (Table 5.2-4)						
SWRCB Resolution 88-63	Will meet	Will meet	Will meet	Will meet	Will meet	Will meet
SWRCB Resolution 68-16	Will not meet	Will not meet (no further groundwater protection)	Will meet	Will meet	Will meet	Will meet
SWRCB Resolution R8-2002-2007	NA	Will meet	Will meet	Will meet	Will meet	Will meet
SWRCB Resolution 92-49	NA	Will meet	Will meet	Will meet	Will meet	Will meet
SCAQMD Best Available Control Technology (BACT)	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Risk Assessment Guidance for Superfund Part B	NA	Will meet	Will meet	Will meet	Will meet	Will meet
EPA Region IX PRGs, 2004	NA	Will meet	Will meet	Will meet	Will meet	Will meet
EPA Technical Guidance, Final Covers	NA	NA	Will meet	Will meet	NA	NA
EPA Alt. Cap Design Guidance	NA	NA	Will meet	Will meet	NA	NA
Huntington Beach Soil Cleanup Standard	NA	Will meet	Will meet	Will meet	Will meet	Will meet
City of Huntington Beach Building Requirements	NA	NA	Will meet	Will meet	Will meet	Will meet
Orange County Health Care Agency	NA	Will meet	Will meet	Will meet	Will meet	Will meet
California Truck Networks Route List	NA	Will meet	Will meet	Will meet	Will meet	Will meet

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ARARs Analysis
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Name of Potential ARAR	Alt. 1 No Action	Alt. 2 Limited Waste Removal	Alt. 3 Protective Cap	Alt. 4 Partial Source Removal with Protective Cap	Alt. 5 Source Removal with Offsite Disposal and SIT	Alt. 6 Source Removal with Offsite Disposal
Caltrans Special Restrictions Route List	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Information Advisory – Clean Imported Fill Material	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Advisory – Active Soil Gas Investigations	NA	Will meet	Will meet	Will meet	Will meet	Will meet
Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air – Interim Final	NA	Will meet	Will meet	Will meet	Will meet	Will meet