PARCEL 7351-033-034

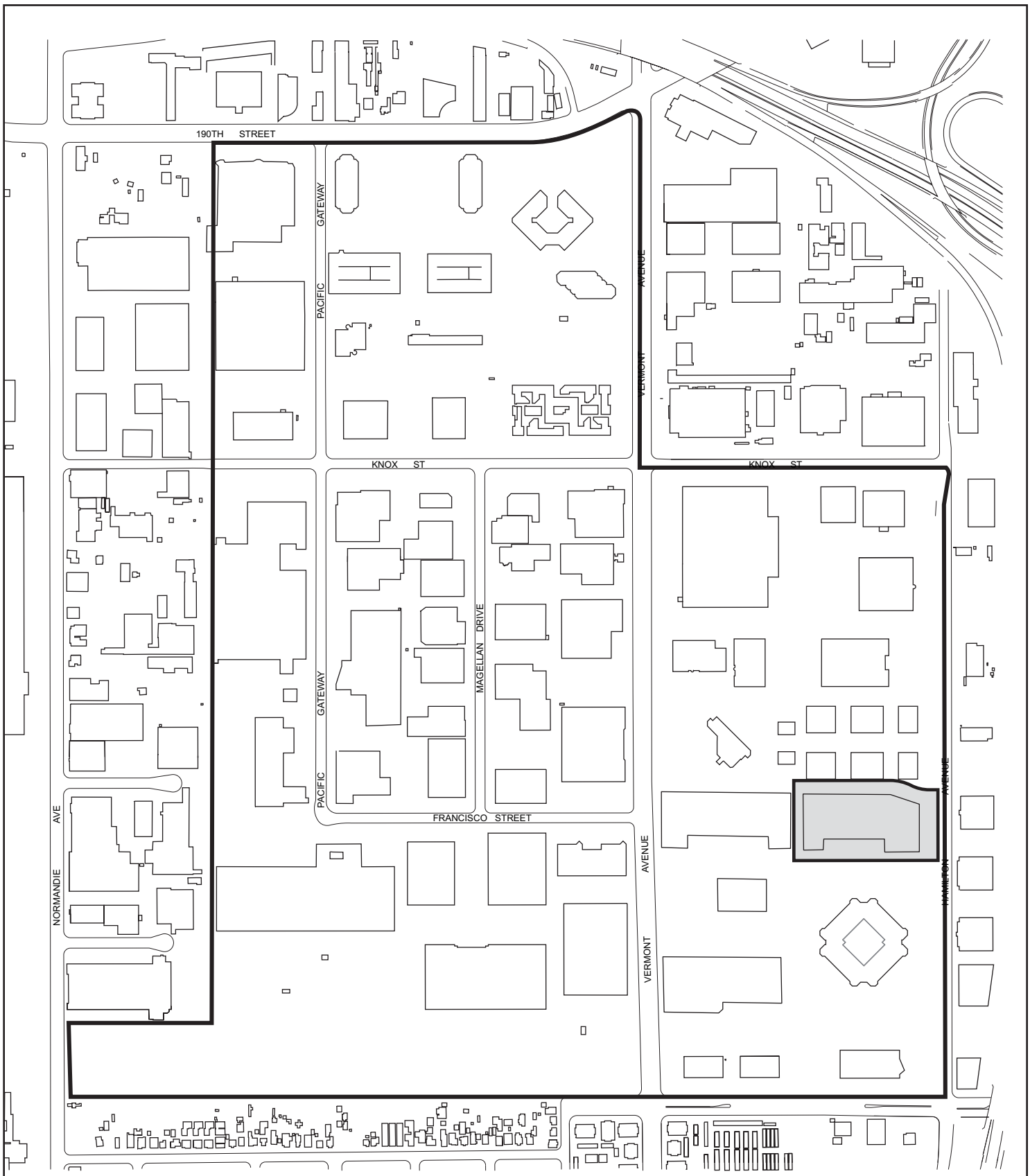
Parcel 7351-033-034 is located in the central portion of the former Butadiene Plancor. Butadiene was manufactured within the plancor as a component of synthetic rubber. The parcel area was used for production of butadiene gas through catalytic dehydrogenation of butylene. There were two butadiene production trains, each consisting of a butylene heater, a combined steam generator and superheater, and a pair of reactors. Purified butylene was vaporized, mixed with steam, and heated prior to entering reactors, where butylene was dehydrogenated in the presence of "Shell 205" catalyst. Propane and other undesirable lighter gas products were removed from the produced butadiene in the southwestern portion of the parcel area. Gases and steam were quenched in an oil stripper scrubber where heavy polymers were removed. The gases were then condensed in an exchanger-type cooler, compressed and partially liquefied. Liquefied hydrocarbons were fractionated to eliminate by-products and sent to the extraction distillation unit for butane removal or extraction of butadiene. Gaseous reaction products were subject to oil absorption for recovery of desirable hydrocarbons.

Plancor facilities identified in the parcel area are as follows:

- Two butylene heaters;
- Steam generators;
- Dehydrogenation reactors;
- A control house building;
- A neutralizing basin (exact location unknown),
- "Change house", administration, garage/fire station, and equipment buildings; and
- Underground pipelines for transport of surface runoff and/or wastewater.

There is no additional information available regarding the function or contents of the former "change house" building.

T:\Ladd\DelAmo\694-134



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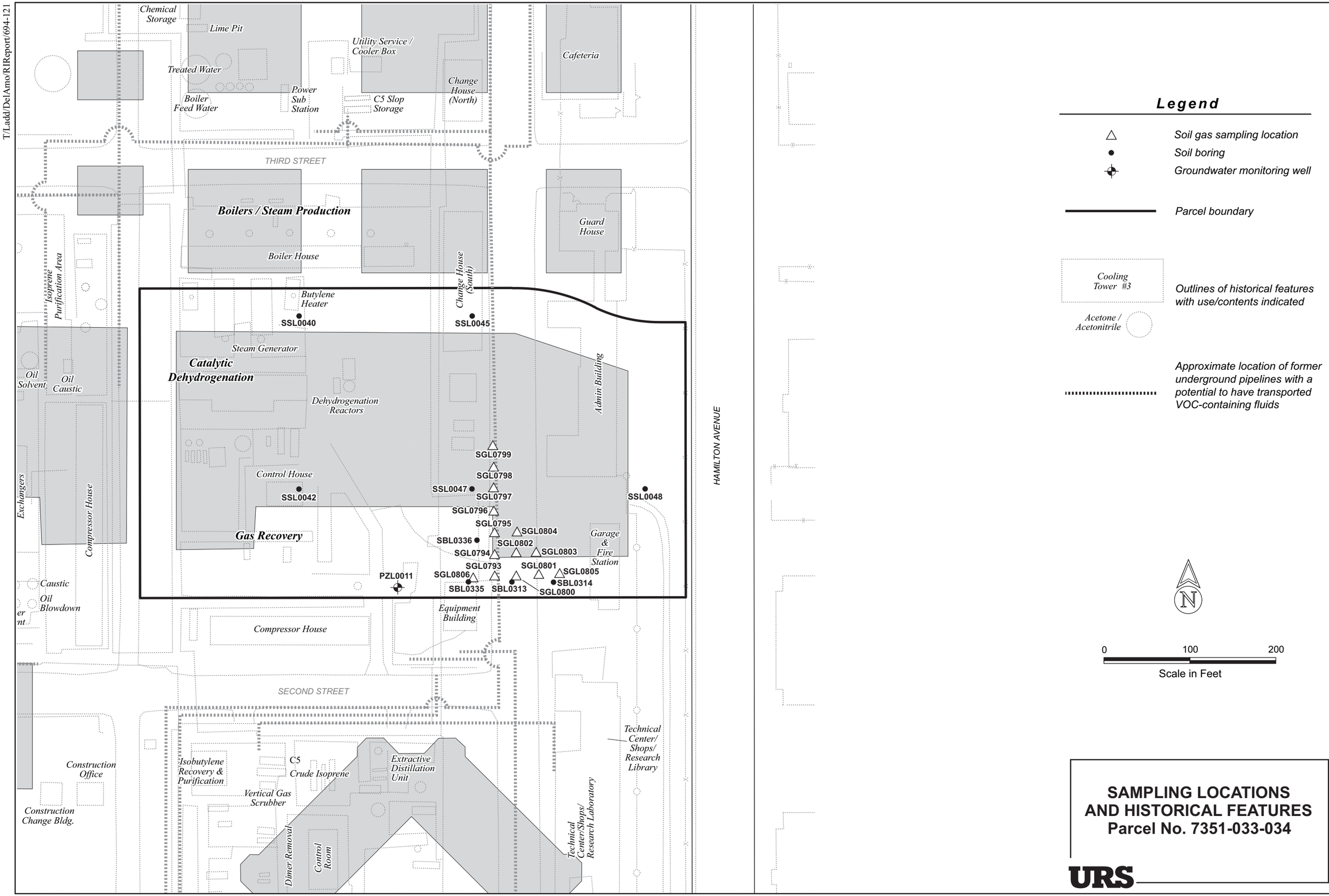
0 600 1,200

Scale in Feet

LOCATION MAP
Parcel 7351-033-034

T/Ladd/DelAmo/RIReport/694-121



SAMPLING LOCATIONS AND HISTORICAL FEATURES
Parcel No. 7351-033-034

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SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Shallow Soil Gas (<= 15')	SGL0793	7.00	04/11/94	VOCs	Tetrachloroethene	0.29 ppmv	
	SGL0794	7.00	04/11/94	VOCs	Tetrachloroethene	0.15 ppmv	
	SGL0795	7.00	04/11/94	VOCs	Tetrachloroethene	0.086 ppmv	
	SGL0796	7.00	04/11/94	VOCs	Tetrachloroethene	0.061 ppmv	
	SGL0797	7.00	04/11/94	VOCs	Tetrachloroethene	0.056 ppmv	
	SGL0798	7.00	04/11/94	VOCs	Tetrachloroethene	0.052 ppmv	
	SGL0799	7.00	04/11/94	VOCs		All ND	
	SGL0800	7.00	04/11/94	VOCs	**Benzene**	**560 ppmv**	**Threshold Value (30)**
					Tetrachloroethene	0.15 ppmv	
					Toluene	1.0 ppmv	
	SGL0801	7.00	04/11/94	VOCs	**Benzene**	**340 ppmv**	**Threshold Value (30)**
					Tetrachloroethene	0.045 ppmv	
					Toluene	0.34 ppmv	
	SGL0802	7.00	04/11/94	VOCs	**Benzene**	**2,000 ppmv**	**Threshold Value (30)**
					Tetrachloroethene	0.57 ppmv	
					Toluene	5.7 ppmv	
	SGL0803	7.00	04/11/94	VOCs	Benzene	17 ppmv	
					Tetrachloroethene	0.015 ppmv	
					Toluene	0.14 ppmv	
	SGL0804	7.00	04/11/94	VOCs	Benzene	0.99 ppmv	
	SGL0805	7.00	04/11/94	VOCs	**Benzene**	**350 ppmv**	**Threshold Value (30)**
					Tetrachloroethene	0.083 ppmv	
					Toluene	0.58 ppmv	
	SGL0806	7.00	04/11/94	VOCs	Tetrachloroethene	0.10 ppmv	
Shallow Soil (<= 15')	SBL0313	9.50	05/13/03	SVOCs/PAHs	2-Methylnaphthalene	0.00082 mg/kg	
					Phenanthrene	0.0048 mg/kg	
	SBL0314	2.00	05/13/03	SVOCs/PAHs		All ND	
	SBL0336	9.50	05/16/03	SVOCs/PAHs	2-Methylnaphthalene	0.0005 mg/kg	
	SSL0040	0.50	06/16/93	SVOCs/PAHs		All ND	
				Pest./PCBs	4,4'-DDD	0.016 mg/kg	
					4,4'-DDE	0.016 mg/kg	
					4,4'-DDT	0.075 mg/kg	
					Dieldrin	0.010 mg/kg	
				Metals	Al	15,000 mg/kg	
					As	**14 mg/kg**	**Background (10)**
					Ba	140 mg/kg	
					Be	0.56 mg/kg	

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SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Shallow Soil (<= 15')	SSL0040	0.50	06/16/93	Metals	Ca	9,700 mg/kg	
					Cd	6.8 mg/kg	
					Co	9.6 mg/kg	
					Cr	18 mg/kg	
					Cu	42 mg/kg	
					Fe	24,000 mg/kg	
					K	3,000 mg/kg	
					Mg	6,800 mg/kg	
					Mn	390 mg/kg	
					Na	510 mg/kg	
					Ni	14 mg/kg	
					Pb	13 mg/kg	
					V	38 mg/kg	
					Zn	56 mg/kg	
				Cyanide	Cyanide	ND	
	SSL0042	0.50	06/16/93	SVOCs/PAHs		All ND	
				Pest./PCBs	4,4'-DDD	0.016 mg/kg	
					4,4'-DDE	0.016 mg/kg	
					4,4'-DDT	0.075 mg/kg	
					Dieldrin	0.010 mg/kg	
				Metals	Al	15,000 mg/kg	
					As	**14 mg/kg**	**Background (10)**
					Ba	140 mg/kg	
					Be	0.56 mg/kg	
					Ca	9,700 mg/kg	
					Cd	6.8 mg/kg	
					Co	9.6 mg/kg	
					Cr	18 mg/kg	
					Cu	42 mg/kg	
					Fe	24,000 mg/kg	
					K	3,000 mg/kg	
					Mg	6,800 mg/kg	
					Mn	390 mg/kg	
					Na	510 mg/kg	
					Ni	14 mg/kg	
					Pb	13 mg/kg	
					V	38 mg/kg	

SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Shallow Soil (<= 15')	SSL0042	0.50	06/16/93	Metals	Zn	56 mg/kg	
				Cyanide	Cyanide	ND	
	SSL0045	0.50	06/16/93	SVOCs/PAHs		All ND	
				Pest./PCBs	4,4'-DDD	0.020 mg/kg	
					4,4'-DDE	0.038 mg/kg	
					4,4'-DDT	0.057 mg/kg	
				Metals	Al	15,000 mg/kg	
					As	5.5 mg/kg	
					Ba	130 mg/kg	
					Be	0.52 mg/kg	
					Ca	6,600 mg/kg	
					Cd	6.9 mg/kg	
					Co	9.2 mg/kg	
					Cr	19 mg/kg	
					Cu	22 mg/kg	
					Fe	23,000 mg/kg	
					K	3,400 mg/kg	
					Mg	6,100 mg/kg	
					Mn	350 mg/kg	
					Na	270 mg/kg	
					Ni	14 mg/kg	
					Pb	37 mg/kg	
					V	37 mg/kg	
					Zn	62 mg/kg	
				Cyanide	Cyanide	ND	
	SSL0047	0.50	06/16/93	SVOCs/PAHs		All ND	
				Pest./PCBs	4,4'-DDD	0.020 mg/kg	
					4,4'-DDE	0.038 mg/kg	
					4,4'-DDT	0.057 mg/kg	
				Metals	Al	15,000 mg/kg	
					As	5.5 mg/kg	
					Ba	130 mg/kg	
					Be	0.52 mg/kg	
					Ca	6,600 mg/kg	
					Cd	6.9 mg/kg	
					Co	9.2 mg/kg	
					Cr	19 mg/kg	

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SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Shallow Soil (<= 15')	SSL0047	0.50	06/16/93	Metals	Cu	22 mg/kg	
					Fe	23,000 mg/kg	
					K	3,400 mg/kg	
					Mg	6,100 mg/kg	
					Mn	350 mg/kg	
					Na	270 mg/kg	
					Ni	14 mg/kg	
					Pb	37 mg/kg	
					V	37 mg/kg	
					Zn	62 mg/kg	
				Cyanide	Cyanide	ND	
	SSL0048	0.50	06/16/93	SVOCs/PAHs		All ND	
				Pest./PCBs	4,4'-DDD	0.020 mg/kg	
					4,4'-DDE	0.038 mg/kg	
					4,4'-DDT	0.057 mg/kg	
				Metals	Al	15,000 mg/kg	
					As	5.5 mg/kg	
					Ba	130 mg/kg	
					Be	0.52 mg/kg	
					Ca	6,600 mg/kg	
					Cd	6.9 mg/kg	
					Co	9.2 mg/kg	
					Cr	19 mg/kg	
					Cu	22 mg/kg	
					Fe	23,000 mg/kg	
					K	3,400 mg/kg	
					Mg	6,100 mg/kg	
					Mn	350 mg/kg	
					Na	270 mg/kg	
					Ni	14 mg/kg	
					Pb	37 mg/kg	
					V	37 mg/kg	
					Zn	62 mg/kg	
				Cyanide	Cyanide	ND	
Deep Soil (> 15')	SBL0335	15.5	05/16/03	SVOCs/PAHs	2-Methylnaphthalene	0.00052 mg/kg	
Groundwater - Water Table	PZL0011	NA	04/28/93	VOCs	**Benzene**	**81,642 ug/l**	**CA MCL (1)**
					Ethylbenzene	**1,937 ug/l**	**CA MCL (700)**

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SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Groundwater - Water Table	PZL0011	NA	04/28/93	VOCs	Naphthalene	180 ug/l	
					Styrene	**12,689 ug/l**	**CA MCL (100)**
					Toluene	**30,292 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**6,377 ug/l**	**CA MCL (1750)**
				SVOCs/PAHs	2-Methylphenol	77 ug/l	
					Phenol	150 ug/l	
			03/23/94	VOCs	**Benzene**	**140,000 ug/l**	**CA MCL (1)**
					Naphthalene	150 ug/l	
					Styrene	**12,000 ug/l**	**CA MCL (100)**
					Toluene	**59,000 ug/l**	**CA MCL (150)**
				SVOCs/PAHs	2-Methylnaphthalene	12 ug/l	
					Phenanthrene	8.8 ug/l	
			04/28/94	VOCs	**Benzene**	**110,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**2,000 ug/l**	**CA MCL (700)**
					Naphthalene	130 ug/l	
					Styrene	**8,900 ug/l**	**CA MCL (100)**
					Toluene	**37,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**4,600 ug/l**	**CA MCL (1750)**
				SVOCs/PAHs	2-Methylnaphthalene	9.4 ug/l	
					Phenanthrene	7.2 ug/l	
					Phenol	6.5 ug/l	
			07/19/94	VOCs	**Benzene**	**110,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**2,200 ug/l**	**CA MCL (700)**
					Naphthalene	70 ug/l	
					Styrene	**11,000 ug/l**	**CA MCL (100)**
					Toluene	**40,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**7,500 ug/l**	**CA MCL (1750)**
			10/21/94	VOCs	**Benzene**	**140,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**2,800 ug/l**	**CA MCL (700)**
					Naphthalene	140 ug/l	
					Styrene	**14,000 ug/l**	**CA MCL (100)**
					Toluene	**57,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**10,000 ug/l**	**CA MCL (1750)**
				SVOCs/PAHs	2-Methylnaphthalene	11 ug/l	
					Phenanthrene	6.6 ug/l	
			03/21/95	VOCs	**Benzene**	**65,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**1,900 ug/l**	**CA MCL (700)**

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SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Groundwater - Water Table	PZL0011	NA	03/21/95	VOCs	Naphthalene	96 ug/l	
					Styrene	**7,600 ug/l**	**CA MCL (100)**
					Toluene	**28,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**6,600 ug/l**	**CA MCL (1750)**
				SVOCs/PAHs	2-Methylnaphthalene	7.6 ug/l	
					Phenanthrene	5.6 ug/l	
			06/30/95	VOCs	**Benzene**	**120,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**4,200 ug/l**	**CA MCL (700)**
					Styrene	**15,000 ug/l**	**CA MCL (100)**
					Toluene	**59,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**13,000 ug/l**	**CA MCL (1750)**
			10/19/95	VOCs	**Benzene**	**91,000 ug/l**	**CA MCL (1)**
					Naphthalene	190 ug/l	
					Toluene	**44,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**3,600 ug/l**	**CA MCL (1750)**
			02/08/96	VOCs	**Benzene**	**86,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**2,000 ug/l**	**CA MCL (700)**
					Naphthalene	150 ug/l	
					Styrene	**9,600 ug/l**	**CA MCL (100)**
					Toluene	**31,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**6,200 ug/l**	**CA MCL (1750)**
			02/06/97	VOCs	**Benzene**	**77,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**2,200 ug/l**	**CA MCL (700)**
					Styrene	**8,200 ug/l**	**CA MCL (100)**
					Toluene	**32,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**7,700 ug/l**	**CA MCL (1750)**
			03/09/98	VOCs	**Benzene**	**43,000 ug/l**	**CA MCL (1)**
					Chlorobenzene	**240 ug/l**	**CA MCL (70)**
					Cyclohexane	2,200 ug/l	
					Ethylbenzene	**1,400 ug/l**	**CA MCL (700)**
					Styrene	**5,500 ug/l**	**CA MCL (100)**
					Toluene	**21,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**4,700 ug/l**	**CA MCL (1750)**
			02/08/99	VOCs	**Benzene**	**38,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**1,900 ug/l**	**CA MCL (700)**
					Styrene	**5,500 ug/l**	**CA MCL (100)**
					Toluene	**22,000 ug/l**	**CA MCL (150)**

SUMMARY OF ANALYTICAL DATA
PARCEL 7351-033-034

Sample Media	Location	Depth (ft. bgs)	Date	Analysis Class	Analyte	Concentration	Screening Criteria Exceeded
Groundwater - Water Table	PZL0011	NA	02/08/99	VOCs	**Xylenes (Total)**	**5,300 ug/l**	**CA MCL (1750)**
			07/31/00	VOCs	**Benzene**	**40,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**1,400 ug/l**	**CA MCL (700)**
					Styrene	**4,500 ug/l**	**CA MCL (100)**
					Toluene	**20,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**4,100 ug/l**	**CA MCL (1750)**
			02/03/04	VOCs	1,2,4-Trimethylbenzene	18 ug/l	
					Benzene	**36,000 ug/l**	**CA MCL (1)**
					Ethylbenzene	**1,300 ug/l**	**CA MCL (700)**
					Isopropylbenzene	11 ug/l	
					Methyl tert-butyl ether	56 ug/l	
					Naphthalene	65 ug/l	
					Styrene	**5,500 ug/l**	**CA MCL (100)**
					Toluene	**22,000 ug/l**	**CA MCL (150)**
					Xylenes (Total)	**2,900 ug/l**	**CA MCL (1750)**

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