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SECOND 2004 SEMI-ANNUAL GROUNDWATER MONITORING REPORT AND ANNUAL SUMMARY

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB Order No. 91-086
File No. 58-137
CI No. 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY
Los Alamitos, California

Prepared by

MACTEC Engineering and Consulting, Inc.
Los Angeles, California

MACTEC Project 4951-03-3551

January 13, 2005

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January 13, 2005

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Second 2004 Semi-Annual Groundwater Monitoring Report**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB File No. 58-137, Order No. 91-086, CI No. 7055
MACTEC Project 4951-03-3551

INTRODUCTORY SUMMARY

MACTEC Engineering and Consulting, Inc., (MACTEC) prepared this report for Los Angeles By-Products Company to satisfy requirements of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Waste Discharge Requirements (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) CI-7055 adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting of waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring and reporting was done during the first and third quarters by MACTEC, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, the Regional Water Quality Control Board (RWQCB) requested that reports be submitted on January 15 and July 15 as stated in the MRP. This report presents the results of our second 2004 semi-annual groundwater monitoring activities at Strathern Landfill.

Due to the significant decrease in regional groundwater levels over the past few years, the site's upgradient Well 4928B has been dry since the first quarter of 2000. Therefore on March 23, 2001, we requested and received permission from the RWQCB to monitor onsite upgradient monitoring

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Well 4928C to provide upgradient groundwater quality data for the site until water levels rise and Well 4928B is no longer dry. Groundwater level measurements of Well 4928B during the second the and fourth quarters of 2004 indicate that the well continues to be dry, as well as other dry monitoring wells in the area previously used for groundwater level measurements.

In addition to sampling Well 4928C, monitoring Well 4928A is also sampled during our semi-annual groundwater monitoring. However, we were unable to collect a groundwater sample from Well 2928A during this period due to the submersible pump malfunction. Based on our experience with similar circumstances with Well 4928C in 2002 and 2003, we believe that the pump and discharge pipe inside the Well 4928A is possibly corroded and may need to be replaced. A bailer could not be used during sampling due to the pump and discharge pipe inside the well reducing the annular space. Therefore, we cannot provide current data for groundwater from Well 4928A for this second biannual monitoring event.

The analytical results from December 2004 monitoring indicate that groundwater quality is similar to historical monitoring results. During December 2004, inorganic groundwater quality met California Drinking Water Standards for the parameters measured except for Total Dissolved Solids (TDS) and electrical conductivity (EC) in well 4928C. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) in well 4928C. However, the site receives only solid inert waste from a small group of disposers, therefore waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

MACTEC measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) CI-7055. MACTEC personnel collected water samples and transported them to the laboratory in accordance with current U.S. Environmental Protection Agency (EPA) sample collection procedure guidelines. Samples were chilled while in transit to the laboratory.

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All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services (DOHS) and in accordance with current EPA guideline procedures as specified in the monitoring program. American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MACTEC prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, and aggregates. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP CI-7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semi-annual sampling and reporting of groundwater quality and quarterly reporting of waste disposal. This report presents the results of the second 2004 semi-annual groundwater monitoring activities at Strathern Landfill.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of Wells 4928A and 4928C. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

SECOND 2004 SEMI-ANNUAL MONITORING RESULTS

This section presents the second 2004 semi-annual monitoring results including groundwater levels and groundwater quality during December 2004.

GROUNDWATER LEVELS

Between June 2004 and December 2004, groundwater levels decreased approximately 1-foot in Well 4928A and in Well 4928C. Well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. Based on the current groundwater levels, groundwater remains near the site's historic low groundwater elevations (Figure 3, Well Hydrographs). This is probably related to the combined effect of minimal groundwater recharge efforts and short and low precipitation winter seasons.

According to the Los Angeles County Department of Public Works (LADPW), 7,132 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2003 through September 2004. Since our first annual 2004 groundwater monitoring report, only additional 158 acre-feet of water has been introduced at the above spreading grounds since May 2004. The groundwater database in Appendix A contains the water level data.

GROUNDWATER FLOW VELOCITY AND DIRECTION

Monitoring wells in the area used for water level measurements were dry during December 2004, except for wells 4928A and 4928C. Therefore, we did not prepare a groundwater contour map or calculate flow velocity and direction for December 2004.

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GROUNDWATER QUALITY

A groundwater sample was collected from well 4928C on December 17, 2004. Groundwater was not sampled from Well 4928C due to the reasons previously described above.

We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, and lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains the results of field and laboratory analyses for December 2004, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains the analytical results and chain-of-custody records from AETL for groundwater sample collected in December 2004.

Inorganics

Laboratory analyses indicated that during December 2004, the groundwater met California Drinking Water Standards for most constituents. At well 4928C, total dissolved solids (TDS) and electrical conductivity (EC) exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively. Table 3 shows December 2004 results compared to California Drinking Water Standards.

Organics

During December 2004, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) detected at 6.5 parts per billion (ppb) in well 4928C. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

ANNUAL SUMMARY

This section presents a summary of monitoring results for 2004, including waste disposal, groundwater levels, and groundwater quality.

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WASTE DISPOSAL

During 2004, Los Angeles By-Products received about 382,960 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of waste deposited during each month of 2004.

GROUNDWATER LEVELS

Groundwater levels generally remained approximately at the same level between the fourth quarter 2003 and the second quarter 2004. In addition, groundwater levels remain approximately at the same level between the second and fourth quarters of 2004. As such groundwater levels remain near the site's historic low groundwater levels. According to the Los Angeles County Department of Public Works (LADPW), 7,132 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2003 through September 2004. As previously discussed in our 2003 annual groundwater monitoring report, a total of approximately 12,273 acre-feet of water was introduced at the spreading grounds during the same time frame. Therefore, less than approximately 5,141 acre-feet of water was introduced in the spreading grounds as compared between the years October 2002 through September 2003 and October 2003 through September 2004. Figure 3 contains the hydrographs for the on-site monitoring wells. The groundwater database in Appendix A contains the water level data for 2004, as well as data from previous years. We did not contour groundwater levels for the second and fourth quarters of 2004.

GROUNDWATER QUALITY

MACTEC collected groundwater samples from Wells 4928A and 4928C during the second quarter of 2004. Groundwater samples for the fourth quarter were collected only from Well 4928C. As discussed above a groundwater sample was not collected from Well 4928A.

Laboratory analyses indicated that during 2004, the groundwater met California Drinking Water Standards for most constituents. At Well 4928A during the second quarter, total dissolved solids (TDS) and electrical conductivity (EC) exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively. At Well 4928C during the fourth quarter, total dissolved solids (TDS) and electrical conductivity (EC) also exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively.

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During 2004, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) of 5.1 ppb in Well 4928A during the second quarter and 6.50 ppb in well 4928A in the fourth quarter. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality. Appendix D contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels remain near the site's historic low water levels and have decreased approximately 25 feet in the site vicinity between the second and fourth quarters of 2004. However, between the fourth quarter of 2003 and second quarter of 2004 the groundwater table remained approximately at the same level. Due to an overall decrease in regional groundwater levels over the past years, upgradient Well 4928B remained dry during the 2004 second and fourth quarter monitoring events. Other monitoring wells in the area used for groundwater level measurements are also dry. The depressed groundwater table in the area is probably the combined result of minimal groundwater recharge efforts by LADPW and short and low precipitation winter seasons.

Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS), and electrical conductivity (EC) in Well 4928A in the second quarter and in Well 4928C in the fourth quarter. Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE in Well 4928A and Well 4928C. There does not appear to be a correlation between landfill operations and groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for leachate from the landfill continues to be low. MACTEC will continue to monitor the groundwater at Strathern Landfill semi-annually.

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We appreciate working with you on this project. If you have any questions regarding this report, please contact Gregory Sena at (323) 889-5300.

Sincerely,

MACTEC Engineering and Consulting

Gregory Sena
Project Geologist

David DeVries R.G. No. 6313
Principal Geologist

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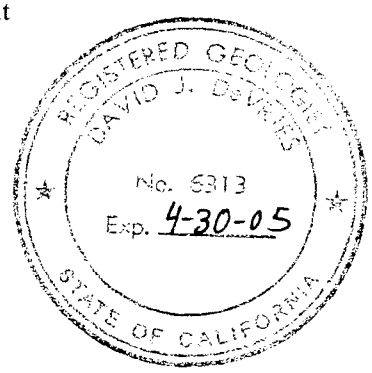
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit



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CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Regional Board's requirements.

I declare under penalty of perjury that the foregoing information is true and correct. Executed this 7TH day of JANUARY, 2005, at Burbank, California.

Mike McAllister
President
Los Angeles By-Products Company

TABLES

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Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Quantities of Fill Deposited During 2004

Quarter	Month	Tons	Cubic Yards* (Approximate)
1	January	35,620	28,496
	February	29,344	23,475
	March	39,095	31,276
2	April	38,058	30,446
	May	33,114	26,491
	June	34,730	27,784
3	July	34,127	27,301
	August	33,013	26,410
	September	27,151	21,721
4	October	21,479	17,183
	November	32,995	26,396
	December	24,234	19,387
TOTALS		382,960	306,366

* 1.25 tons per cubic yard

Prepared by: GS – 01/07/05
Checked by: JL – 01/12/05

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Table 3: Site Water Quality vs. California Drinking Water Standards
2004 Cumulative Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
			4928A (downgradient)		4928C (upgradient)	
			June	December	June	December
Field Measurements						
pH	pH units	6 – 9	7.31	—	7.47	7.14
Temperature	°F	—	68		67.1	66.92
Electrical Conductivity	µmhos/cm	900*	1,070	—	598	1,487
Carbon Dioxide	mg/L	—	43	—	40	40
Alkalinity	mg/L	—	380	—	280	380
Inorganic						
pH	pH units	6 – 9	6.99	—	7.14	6.96
Electrical Conductivity	µmhos/cm	900*	1,120	—	702	1,440
Alkalinity	mg/L	—	456	—	272	600
Total Dissolved Solids (TDS)	mg/L	500*	705	—	420	900
Chloride (Cl)	mg/L	250*	51.0	—	24.0	48.7
Sulfate (SO4)	mg/L	250*	68.4	—	62.4	28.1
Nitrate (NO3)	mg/L	45	19.4	—	6.82	2.85
Boron (B)	mg/L	1**	0.520	—	0.283	0.438
Chemical Oxygen Demand (COD)	mg/L	—	<5.0	—	7.78 J	<5.0
Bicarbonate (HCO3)	mg/L	—	456	—	272	600
Iron (Fe)	mg/L	0.3*	<0.02	—	0.043 J	<0.02
Carbonate (CO3)	mg/L	—	<1	—	<1	<1
Cadmium (Cd)	µg/L	5	<5	—	<5	<5
Chromium (Cr)	µg/L	50	15 J	—	14 J	<10
Lead (Pb)	µg/L	15**	<15	—	<15	<15
Nickel (Ni)	µg/L	100	<10	—	<10	<10
Organic						
Benzene	µg/L	1	<0.25	—	<0.25	<0.25
Trichloroethylene (TCE)	µg/L	5	0.7	—	0.8	<0.25
Tetrachloroethylene (PCE)	µg/L	5	5.1	—	4.8	6.50
Vinyl Chloride (VC)	µg/L	0.5	<0.25	—	<0.25	<0.25

Prepared/Date: GS – 12/29/04
Checked/Date: JL – 01/12/05

1 – Source: CCR, Title 22, Division 4, Chapter 15

** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

FIGURES

JOB 4951-03-3551 DATE 6/11/2004 F.T. ____ DR. I.F. ____ O.E. R. roley CHKD ____

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS COMPANY
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

REFERENCE:
U.S.G.S. 7.5-MINUTE BURBANK AND VAN NUYS QUADRANGLES, 1966, PHOTOREVISED 1972.

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FIGURE 1

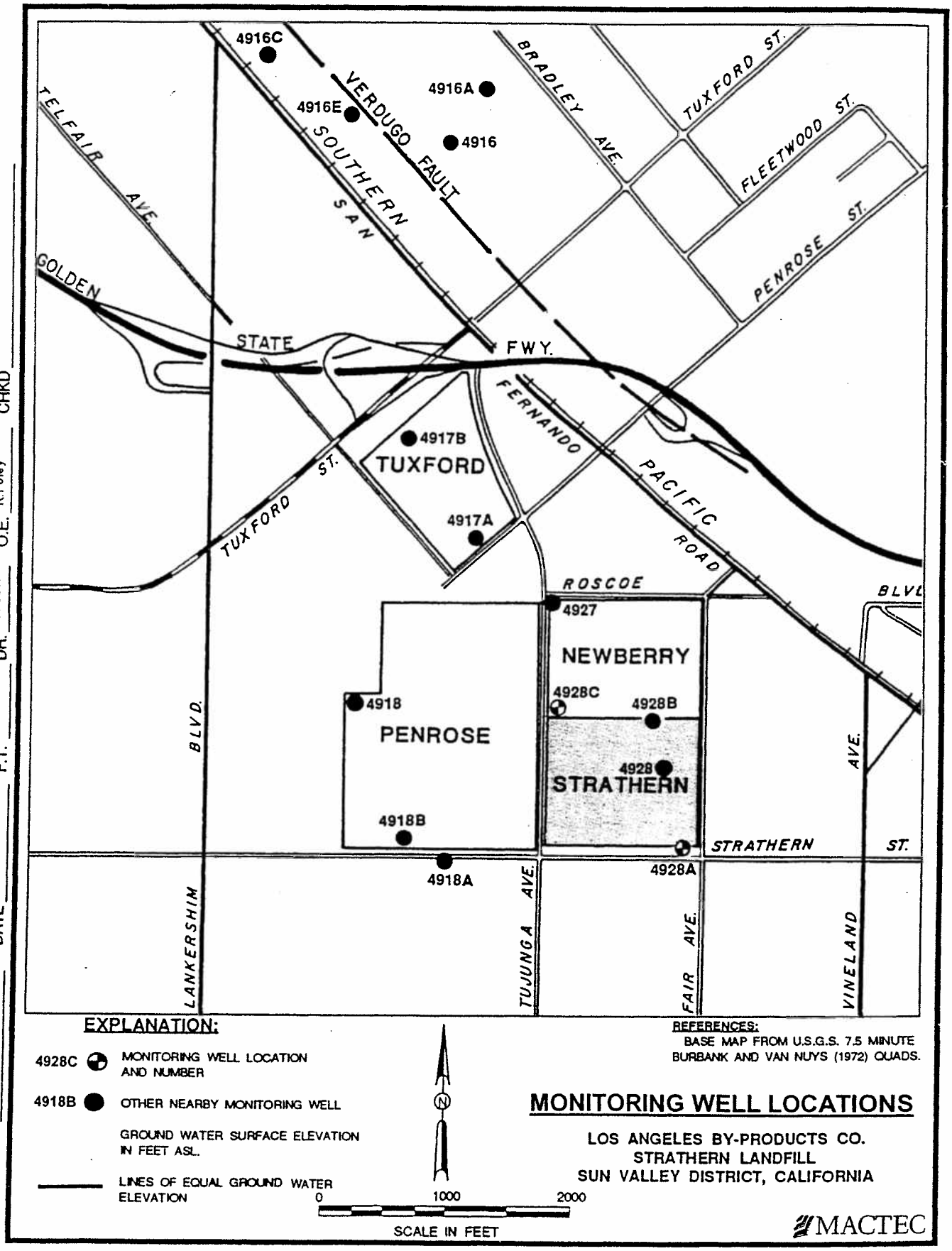
4916C
VERDUGO FAULT
SOUTHERN
SAN
4916E
4916A
4916
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
4917B
TUXFORD
FERNANDO
PACIFIC
ROAD
TUXFORD ST.
4917A
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4918
PENROSE
BLVD.
4928
STRATHERN
AVE.
4918B
STRATHERN ST.
4928A
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 4951-03-3551
DATE 12/08/03
F.T.
DR. ToddT.
O.E. K.Foley
CHKD
EXPLANATION:
4928C MONITORING WELL LOCATION AND NUMBER
4918B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL.
LINES OF EQUAL GROUND WATER ELEVATION
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC

FIGURE 2

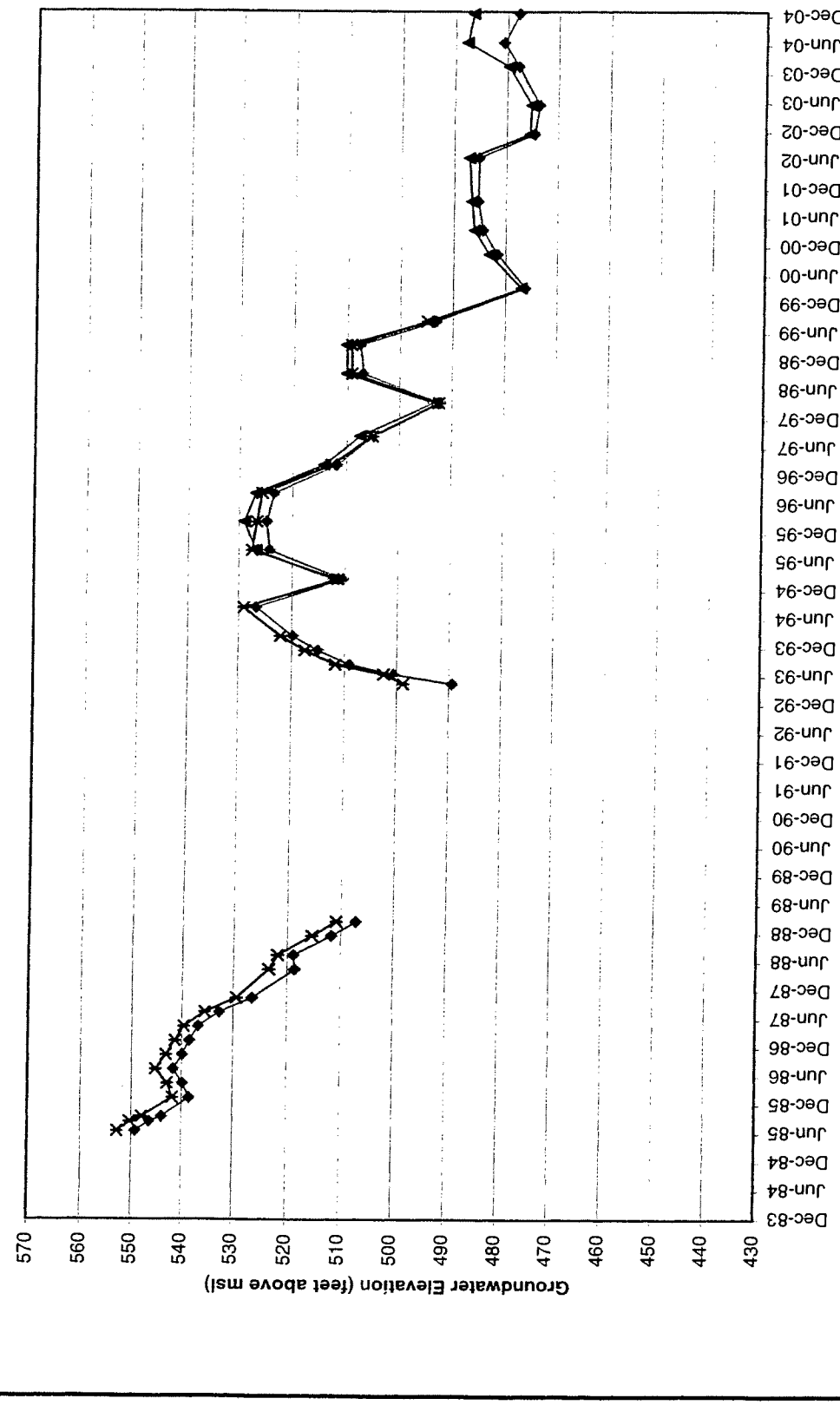

Figure 3

MACTEC Engineering and Consulting, Inc.

APPENDIX A

GROUNDWATER DATABASE

E _____ F. _____ DR _____ D.E. GS CHK JG

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84								560	7.70	73	16	26	4.2	0.0	280
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490
4928A	17-Jul-85		547.95	8.8	68	1180	102.0	480	1300	8.90	120	34	93	8.8	0.0	620
4928A	14-Aug-85		546.41	8.8	74	1250	22.5		1400	7.80	230	33	79	11.0	0.0	610
4928A	19-Sep-85		543.93	8.3	88	1250	40.5	555	1500	6.80	250	35	78	8.0	0.0	670
4928A	18-Jan-86		538.51	7.0	66	1400		180	1400	7.00	180	40	91	8.8	0.0	620
4928A	29-Apr-86		539.84	6.6	88	900	68.0	350	1100	7.80	170	27	63	7.8	0.0	488
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.10	170	38	80	8.0	0.0	390
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490
4928A	14-Jan-87		538.50	8.9	66	340	75.0	460	1400	7.00	160	38	82	7.8	0.0	590
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	8.80	170	44	85	8.8	<0.8	650
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.8	630
4928A	21-Oct-87		526.40	6.9	66	760	34.5	438	1300	7.70	140	34	82	8.5	<0.6	590
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.30	110	63	83	8.4	<0.8	480
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.8	<0.8	442
4928A	08-Nov-88		511.81	7.2	85	700	32.0	350	760	7.20	91	26	49	5.6	<0.8	370
4928A	07-Feb-89	803.78	507.20	7.0	68	700	35.0	360	720	7.20	92	21	35	4.5	<0.8	350
4928A	02-Apr-93		489.42	7.9	67	350	37	284	590	7.80	72	17	29	4.8	<0.8	320
4928A	22-Jun-93		500.59	7.8	66	440	25	252	810	7.50	72	18	29	4.5	<0.8	290
4928A	24-Aug-93		509.08	NA	87	550	25	244	810	7.10	73	18	30	4.6	<0.8	290
4928A	19-Nov-93		515.15	7.40	68	500	22	248	800	7.40	69	17	29	4.5	<0.6	290
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430
4928A	05-Aug-94		526.84	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330
4928A	20-Feb-95		510.49						830	6.90	97	25	36	5.3	<0.8	390
4928A	24-Aug-95		524.22	7.00	88	850	100	388	900	8.90	100	25	43	5.4	<10	330
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	8.80	120	53	48	5.9	<10	380
4928A	23-Aug-96		523.41													
4928A	11-Sep-96		NM													
4928A	31-Oct-96		518.47	7.40	65.4	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97		511.81	7.20	65.2	830	50	420	850	6.90	100	27	37	5.8	0	390
4928A	28-Aug-97		504.90	7.00	66.9	825	34	372	890	6.60	110	27	41	5.5	0	400
4928A	12-Mar-98		492.23	7.30	68.3	881	36	320	890	7.25	101	28.5	34.3	8.4	<2.0	320
4928A	21-Sep-98		507.01	7.17	65.9	785	25		818	7.04	96.6	24.6	31.2	5.0	<2	358
4928A	30-Mar-99		507.59	7.60	70.2	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324
4928A	25-Aug-99		493.23	7.46	66.9	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332
4928A	10-Mar-00		476.16	7.25	84.0	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296
4928A	09-Oct-00		481.63	6.76	87.1	800	30	372	790	8.81	93.9	24.2	32.6	5.5	<1	286
4928A	29-Mar-01		464.40	7.44	65.1	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290
4928A	25-Sep-01		485.40	8.10	66.2	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288
4928A	05-Jun-02		485.28	7.65	85.5	766	26	363	761	7.20	88.8	24.1	34.5	15.8	<1	282
4928A	27-Nov-02		474.58	6.90	65.3	722	32	336	824	7.13	99.4	28.1	35.3	5.5	<1	280
4928A	30-May-03		473.67	7.31	67.1	664	33	348	720	7.26	81.4	21.1	29.5	4.59	<1	284
4928A	10-Dec-03		449.97	7.40	66.8	1300	35	530	1120	7.06	147	35.7	38.7	5.37	<1	464
4928A	08-Jan-04		477.78													
4928A	08-Jun-04		450.35	7.31	88.0	1070	43	380	1120	8.99	135	33.0	37.8	5.74	<1	456
4928A	17-Dec-04		450.58													

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450
4928B	17-Jul-85		551.71	8.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341
4928B	22-Jul-86		545.14	7.3	70	820	30.0	270	700	7.40	110	20	37	4.4	0.0	290
4928B	15-Oct-86		543.10	6.0	68	890	33.5	255	880	7.60	87	10	29	4.2	0.0	280
4928B	14-Jan-87		541.32	8.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340
4928B	15-Apr-87		539.83	8.2	85	450	25.0	250	680	7.00	80	22	33	4.0	<0.8	340
4928B	24-Jul-87		535.48	8.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350
4928B	21-Oct-87		529.40	8.9	66	485	85.0	291	740	7.90	90	22	35	5.0	<0.8	370
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	338	680	7.50	85	20	30	3.9	<0.8	350
4929B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.8	380
4928B	07-Feb-89		511.00	6.8	66	870	23.0	372	680	7.30	85	24	38	4.8	<0.6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	28	19	34	4.7	<0.8	230
4928B	22-Jun-93		502.46	7.8	69.0	500	45	300	890	7.00	70	26	39	8.2	<0.8	370
4928B	24-Aug-93		511.79		68.0	600	50	288	880	8.50	82	22	32	5.0	<0.8	370
4928B	19-Nov-93		517.50	7.6	87.0	550	33	320	690	7.10	93	25	37	5.5	<0.8	370
4928B	21-Feb-94		522.09	7.3	69.0	525	85	332	730	7.10	100	27	38	6.0	<0.8	430
4928B	05-Aug-94		528.93	7.0	88.0	950		528	1000	6.80	130	35	39	8.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.8	550
4928B	24-Aug-96		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.80	7.2	75.0	820	35	546	1400	6.80	190	54	52	8.5	<10	890
4928B	23-Aug-96		525.81													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	8.1	<0.8	630
4928B	14-Feb-97		512.95	7.8	89.0	930	79	540	910	7.00	110	31	36	5.8	0	500
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.80	150	41	45	8.4	0	600
4928B	12-Mar-98		492.50	7.0	73.8	1152		502	1110	7.00	97	35	81	9	<2.0	502
4928B	21-Sep-98		509.2	7.3	89.8	835			1020	7.09	72	22	101	7.2	<2.0	438
4928B	30-Mar-99		509.34	6.9	72.8	1381		532	1310	7.13	154	<0.05	43.8	8.2	<2.0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	8.88	118	34	48	4.8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													
4928B	25-Sep-01		DRY													
4928B	05-Jun-02		DRY													
4928B	27-Nov-02		DRY													

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	30-May-03		DRY													
4928B	10-Dec-03		DRY													
4928B	08-Jun-04		DRY													
4928B	17-Dec-04		DRY													
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.18													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		478.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	488.11	8.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		488.62	7.50	70.7	1550	85	920	1560	7.32	190	48.8	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	870
4928C	27-Nov-02		475.52													
4928C	30-May-03		475.27													
4928C	10-Dec-03		487.65	7.45	67.5	680	30	340	756	7.24	88.6	22.3	31.4	4.47	<1	290
4928C	08-Jan-04		479.70													
4928C	08-Jun-04		487.78	7.47	67.1	598	40	280	702	7.14	79.3	20.2	28.8	4.74	<1	272
4928C	24-Jun-04		487.78													
4928C	17-Dec-04		486.57	7.14	66.9	1487	40	380	1,440	6.96	173	42.6	41.9	6.62	<1	600

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	16.0			650			1			1.0		0.70	#REF!	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.048			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	280	8.8			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		800	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<8	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	48	46	21	0.28		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	67	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	87	35	42	0.29		560	<8	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		830	<8	0.56	8.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	28-Aug-97	69	38	50	0.25		590	<6	0.89	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.8		593	<10	0.8	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<8	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	38	11.7	0.2		509	22	1.1	8.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	75	33	53.1	0.4	348	476	5.4'	0.8	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014'	0.215	<50	<10	AETL
4928A	10-Dec-03	80.4	63	27.9	0.512	575	885	13.7	0.4'	4.5	<0.25	<0.25	<5	12'	<0.02	<15	<10	AETL
4928A	08-Jan-04																	
4928A	08-Jun-04	68.4	51.0	19.4	0.520	528	705	<5	0.7	5.1	<0.25	<0.25	<5	15'	<0.02	<15	<10	AETL
4928A	17-Dec-04																	

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	81	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	18-Jan-88	28	25	28.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-86	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-86	60	35	15.0	0.3		440	<0.05	<1	<1			<10		0.29	<20		B&C
4928B	14-Jan-87	51	18	5.3	0.5		420	0.10	<1	2			<10		<0.03	<20	<0.06	B&C
4928B	15-Apr-87	54	18	8.6	0.4		410	0.08	<1	2			<10		0.88	<10	<0.04	B&C
4928B	24-Jul-87	50	24	8.8			430	<0.05	<1	4			<20		<0.02	<20	<0.04	B&C
4928B	21-Oct-87	50	21	8.4	0.25		430	<0.05	<1	<1			<20		0.20	<10	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7.0	<1	3			<20		5.70	13	<0.004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	8.0	<1	4			<1		<0.02	<2	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0.18		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89	56	17	3.9	<0.02		400	<5	1	5			<1		2.20	3	<0.04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0.5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1.7			1		14	24	<0.04	B&C
4928B	24-Aug-93	46	17	3.4			390	<8	<1	2.0			<1		17	18	<0.04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0.5	1.4			<1		82	3	<0.04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0.5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0.27		600		1.1	2.7			<3		7.9	17	<0.005	B&C
4928B	20-Feb-95	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<5	<10	2.4	18	<0.04	B&C
4928B	24-Aug-95	45	28	30	<0.2		610	<8	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2.8			<1	<10	24	7.8	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0.31		760		1.4	5.8			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	28-Aug-97	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		602	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98	57	39	8.2	0.3		618	<6	<0.5	1.8			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99	53	55	1.3	0.3		789	<8.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99	67	40	6.8	0.3		754	<8.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	
4928B	25-Sep-01																	
4928B	05-Jun-02																	
4928B	27-Nov-02																	

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	30-May-03																	
4928B	10-Dec-03																	
4928B	08-Jun-04																	
4928B	17-Dec-04																	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02																	
4928C	30-May-03																	
4928C	10-Dec-03	62.8	31	21.7	0.285	332	456	12.4	0.8	6.4	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	08-Jan-04																	
4928C	08-Jun-04	62.4	24.0	6.82	0.283	302	420	7.78J	0.8	4.8	<0.25	<0.25	<5	14J	0.043J	<15	<10	AETL
4928C	24-Jun-04																	
4928C	17-Dec-04	28.1	48.7	2.85	0.438	680	900	<5.0	<0.25	6.5	<0.25	<0.25	<5	<10	<0.02	<50	<10	AETL

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

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GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

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FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Gregory Sena

Number of Pages 11
Date Received 12/17/2004
Date Reported 12/27/2004

Job Number	Order Date	Client
31709	12/17/2004	LC

Project ID: 4951-03-3551
Project Name: Strathern Landfill
Site: Sun Valley, CA

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

№ 36105

AETL JOB No. 31709

Page 1 of 1

COMPANY: MACTEC
PHONE: (323) 889-5300
PROJECT MANAGER: GREGORY SENA
FAX: (323) 721-6700
PROJECT NAME: STRATHERN LANDFILL
PROJECT #: 4951-03-3551
SITE NAME AND ADDRESS: STRATHERN - SUN VALLEY

ANALYSIS REQUESTED

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	GEN MIN.	TOTAL HARDNESS	BORON	COD	524.2	Cd, Cr, Ni, Pb				TEST INSTRUCTIONS & COMMENTS
4928A		12/17/04	[illegible]	W	4	Cooler										
4928C	31709-01	12/17/04	0930	W	4	Cooler	X	X	X	X	X	X				

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	4	PROPERLY COOLED Y / N / NA	
CUSTODY SEALS Y / N / NA		SAMPLES INTACT Y / N / NA	
RECEIVED IN GOOD COND. Y / N		SAMPLES ACCEPTED Y / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: 12-17-04 Time: 1106	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: [signature]
Printed Name:	Printed Name:	Printed Name: Jowel
Date: Time:	Date: Time:	Date: 12-17-04 Time: 1106

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

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Site

Sun Valley, CA

Telephone: (323)889-5300
Attn: Gregory Sena

Page: 2

Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 122104

Our Lab I.D.			Method Blank	31709.01			
Client Sample I.D.				4928C			
Date Sampled				12/17/2004			
Date Prepared			12/21/2004	12/17/2004			
Preparation Method			5035A	5035A			
Date Analyzed			12/21/2004	12/21/2004			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acetone	0.5	1.0	ND	ND			
Benzene	0.25	0.50	ND	ND			
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND			
Bromochloromethane	0.25	0.50	ND	ND			
Bromodichloromethane	0.25	0.50	ND	ND			
Bromoform (Tribromomethane)	0.25	0.50	ND	ND			
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND			
2-Butanone (MEK)	0.5	1.0	ND	ND			
n-Butylbenzene	0.25	0.50	ND	ND			
sec-Butylbenzene	0.25	0.50	ND	ND			
tert-Butylbenzene	0.25	0.50	ND	ND			
Carbon Disulfide	0.25	0.50	ND	ND			
Carbon tetrachloride	0.25	0.50	ND	ND			
Chlorobenzene	0.25	0.50	ND	ND			
Chloroethane	0.25	0.50	ND	ND			
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND			
Chloroform (Trichloromethane)	0.25	0.50	ND	ND			
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND			
2-Chlorotoluene	0.25	0.50	ND	ND			
4-Chlorotoluene	0.25	0.50	ND	ND			
1,2-Dibromo-3-chloropropane (DBCP)	0.25	0.50	ND	ND			
Dibromochloromethane	0.25	0.50	ND	ND			
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND			
Dibromomethane	0.25	0.50	ND	ND			
1,2-Dichlorobenzene	0.25	0.50	ND	ND			
1,3-Dichlorobenzene	0.25	0.50	ND	ND			
1,4-Dichlorobenzene	0.25	0.50	ND	ND			
Dichlorodifluoromethane	0.25	0.50	ND	ND			

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ANALYTICAL RESULTS

Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 122104

Our Lab I.D.			Method Blank	31709.01			
Client Sample I.D.				4928C			
Date Sampled				12/17/2004			
Date Prepared			12/21/2004	12/17/2004			
Preparation Method			5035A	5035A			
Date Analyzed			12/21/2004	12/21/2004			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	MDL	PQL	Results	Results			
1,1-Dichloroethane	0.25	0.50	ND	1.11			
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND			
1,1-Dichloroethene	0.25	0.50	ND	ND			
cis-1,2-Dichloroethene	0.25	0.50	ND	ND			
trans-1,2-Dichloroethene	0.25	0.50	ND	ND			
1,2-Dichloropropane	0.25	0.50	ND	ND			
1,3-Dichloropropane	0.25	0.50	ND	ND			
2,2-Dichloropropane	0.25	0.50	ND	ND			
1,1-Dichloropropene	0.25	0.50	ND	ND			
cis-1,3-Dichloropropene	0.25	0.50	ND	ND			
trans-1,3-Dichloropropene	0.25	0.50	ND	ND			
Ethylbenzene	0.25	0.50	ND	ND			
Hexachlorobutadiene	0.25	0.50	ND	ND			
2-Hexanone	0.5	1.0	ND	ND			
Isopropylbenzene	0.25	0.50	ND	ND			
p-Isopropyltoluene	0.25	0.50	ND	ND			
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND			
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND			
Methylene chloride (DCM)	0.5	1.0	ND	ND			
Naphthalene	0.25	0.50	ND	ND			
n-Propylbenzene	0.25	0.50	ND	ND			
Styrene	0.25	0.50	ND	ND			
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND			
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND			
Tetrachloroethene	0.25	0.50	ND	6.50			
Toluene (Methyl benzene)	0.25	0.50	ND	ND			
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND			
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND			
1,1,1-Trichloroethane	0.25	0.50	ND	ND			
1,1,2-Trichloroethane	0.25	0.50	ND	ND			
Trichloroethene	0.25	0.50	ND	ND			
Trichlorofluoromethane	0.5	1.0	ND	ND			
1,2,3-Trichloropropane	0.25	0.50	ND	ND			
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND			

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ANALYTICAL RESULTS

Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 122104

Our Lab I.D.			Method Blank	31709.01			
Client Sample I.D.				4928C			
Date Sampled				12/17/2004			
Date Prepared			12/21/2004	12/17/2004			
Preparation Method			5035A	5035A			
Date Analyzed			12/21/2004	12/21/2004			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND			
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND			
Vinyl Acetate	0.25	0.50	ND	ND			
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND			
o-Xylene	0.25	0.50	ND	ND			
m,p-Xylenes	0.5	1.0	ND	ND			
Total trihalomethane compounds	0.25	0.50	ND	ND			
Our Lab I.D.				31709.01			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		107	100			
1,2-Dichlorobenzene	75-125		92	82			

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Site

Sun Valley, CA

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Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: GEN.-MINERALS, General Minerals

QC Batch No: 121704

Our Lab I.D.			Method Blank	31709.01			
Client Sample I.D.				4928C			
Date Sampled				12/17/2004			
Date Prepared			12/17/2004	12/17/2004			
Preparation Method			VARIOUS	VARIOUS			
Date Analyzed			12/21/2004	12/21/2004			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	600			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	600			
Anions Total (meq/L)	0.01	0.01	NA	14.2			
Cations Total (meq/L)	0.01	0.01	NA	14.2			
Ion Balance (percent difference)	0.01	0.01	NA	NA			
Chloride (Cl), Total	0.5	1.0	ND	48.7			
Conductivity (umhos/cm @77F)	5	10	ND	1,440			
Fluoride, Total	0.1	0.2	ND	ND			
Hardness (Ca,Mg) as CaCO3	1	2	ND	680			
Nitrate as Nitrogen	0.05	0.10	ND	2.85			
Nitrite as Nitrogen	0.01	0.02	ND	ND			
pH (pH units)	0.01	0.01	NA	6.96			
Sulfate	5	10	ND	28.1			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	900			
Aluminum	0.05	0.10	ND	ND			
Calcium	0.25	0.50	ND	173			
Copper	0.01	0.02	ND	ND			
Iron	0.02	0.05	ND	ND			
Magnesium	0.25	0.50	ND	42.6			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	6.62			
Sodium	0.25	0.50	ND	41.9			
Zinc	0.015	0.030	ND	0.701			

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Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Our Lab I.D.							N/A	31709.01	
Client Sample I.D.							Method Blank	4928C	
Date Sampled							12/17/2004	12/17/2004	
Matrix							Aqueous	Aqueous	
Analytes	D.F.	Method	Units	MDL	PQL	Analyzed	Results	Results	
Boron	1	200.7	mg/L	0.050	0.100	12/22/2004	ND	0.438	
Cadmium	1	200.7	mg/L	0.005	0.050	12/22/2004	ND	ND	
Chromium	1	200.7	mg/L	0.01	0.05	12/22/2004	ND	ND	
Lead	1	200.7	mg/L	0.015	0.100	12/22/2004	ND	ND	
Nickel	1	200.7	mg/L	0.01	0.05	12/22/2004	ND	ND	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	12/20/2004	ND	ND	

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Page: 7
Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 200.7, Boron by IPC

QUALITY CONTROL REPORT

QC Batch No: 121704-1 Sample Spiked: 31660.01 QC Prepared: 12/17/2004 QC Analyzed: 12/22/2004 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.507	1.00	1.55	104	1.00	1.56	105	<1	80-120	<20

QC Batch No: 121704-1 Sample Spiked: 31660.01 QC Prepared: 12/17/2004 QC Analyzed: 12/22/2004 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Boron	1.00	0.99	99	80-120						

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Site
Sun Valley, CA

Telephone: (323)889-5300
Attn: Gregory Sena

Page: 8
Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 200.7, Four Metals

QUALITY CONTROL REPORT

QC Batch No: 122204 Sample Spiked: 122204 QC Prepared: 12/22/2004 QC Analyzed: 12/22/2004 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	0.0	1.00	0.99 X	99	1.00	0.99 X	99	<1	80-120	<15
Chromium	0.0	1.00	0.98 X	98	1.00	0.98 X	98	<1	80-120	<15
Lead	0.0	1.00	0.97 X	97	1.00	0.98 X	98	1.0	80-120	<15
Nickel	0.0	1.00	0.98 X	98	1.00	0.98 X	98	<1	80-120	<15

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Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 122004 Sample Spiked: 31674.01 QC Prepared: 12/20/2004 QC Analyzed: 12/20/2004 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	ND	50.00	48.50	97	50.00	46.50	93	4.2	80-120	<15

QC Batch No: 122004 Sample Spiked: 31674.01 QC Prepared: 12/20/2004 QC Analyzed: 12/20/2004 Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	48.50	97	80-120		

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ANALYTICAL RESULTS

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley, CA

Telephone: (323)889-5300
Attn: Gregory Sena

Page: 10
Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 122104 Sample Spiked: 122104 QC Prepared: 12/21/2004 QC Analyzed: 12/21/2004 Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	26.25	105	25.00	25.50	102	2.9	75-125	<20	
Chlorobenzene	25.00	24.50	98	25.00	24.25	97	1.0	75-125	<20	
Chloroform (Trichloromethane)	25.00	27.25	109	25.00	26.00	104	4.7	75-125	<20	
1,1-Dichloroethene	25.00	27.75	111	25.00	28.50	114	2.7	75-125	<20	
Ethylbenzene	25.00	26.00	104	25.00	25.50	102	1.9	75-125	<20	
Toluene (Methyl benzene)	25.00	24.50	98	25.00	25.00	100	2.0	75-125	<20	
1,1,1-Trichloroethane	25.00	27.50	110	25.00	26.75	107	2.8	75-125	<20	
Trichloroethene	25.00	26.00	104	25.00	26.00	104	<1	75-125	<20	
o-Xylene	25.00	25.75	103	25.00	26.00	104	<1	75-125	<20	
m,p-Xylenes	50.00	52.00	104	50.00	52.00	104	<1	75-125	<20	

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ANALYTICAL RESULTS

Ordered By
MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site
Sun Valley, CA

Telephone: (323)889-5300
Attn: Gregory Sena

Page: 11
Project ID: 4951-03-3551
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
31709	12/17/2004	LC

Method: GEN.-MINERALS, General Minerals
QUALITY CONTROL REPORT

QC Batch No: 121704 Sample Spiked: 121704 QC Prepared: 12/17/2004 QC Analyzed: 12/21/2004 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	600	20.00	620.00	100	20.00	620.00	100	<1	80-120	<15
Total Alkalinity	600	20.00	620.00	100	20.00	620.00	100	<1	80-120	<15
Chloride (Cl), Total	0.0	20.00	22.00 X	110	20.00	22.00 X	110	<1	80-120	<15
Fluoride, Total	0.0	2.00	2.00 X	100	2.00	2.00 X	100	<1	80-120	<15
Hardness (Ca,Mg) as CaCO3	680	20.00	700.00	100	20.00	700.00	100	<1	80-120	<15
Nitrate as Nitrogen	0.0	2.00	1.76 X	88	2.00	1.72 X	86	2.3	80-120	<15
Nitrite as Nitrogen	0.0	0.20	0.22 X	110	0.20	0.22 X	108	1.8	80-120	<15
Sulfate	0.0	20.00	16.80 X	84	20.00	17.00 X	85	1.2	80-120	<15
Surfactants (MBAS)	0.065	0.20	0.28	107	0.20	0.28	105	1.9	80-120	<15
Aluminum	0.0	1.00	1.03 X	103	1.00	1.03 X	103	<1	80-120	<15
Calcium	0.0	1.00	1.05 X	105	1.00	1.03 X	103	1.9	80-120	<15
Copper	0.0	1.00	0.96 X	96	1.00	0.96 X	96	<1	80-120	<15
Iron	0.0	1.00	1.07 X	107	1.00	1.06 X	106	<1	80-120	<15
Magnesium	0.0	1.00	1.02 X	102	1.00	1.01 X	101	<1	80-120	<15
Manganese	0.0	1.00	0.98 X	98	1.00	0.98 X	98	<1	80-120	<15
Potassium	0.0	10.00	9.80 X	98	10.00	9.70 X	97	1.0	80-120	<15
Sodium	0.0	1.00	1.00 X	100	1.00	0.99 X	99	1.0	80-120	<15
Zinc	0.0	1.00	1.01 X	101	1.00	1.01 X	101	<1	80-120	<15

QC Batch No: 121704 Sample Spiked: 121704 QC Prepared: 12/17/2004 QC Analyzed: 12/21/2004 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
pH (pH units)	7.00	7.00	100	80-120
Surfactants (MBAS)	0.20	0.19	96	80-120
Total Dissolved Solids	100.00	91.00	91	80-120

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Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate

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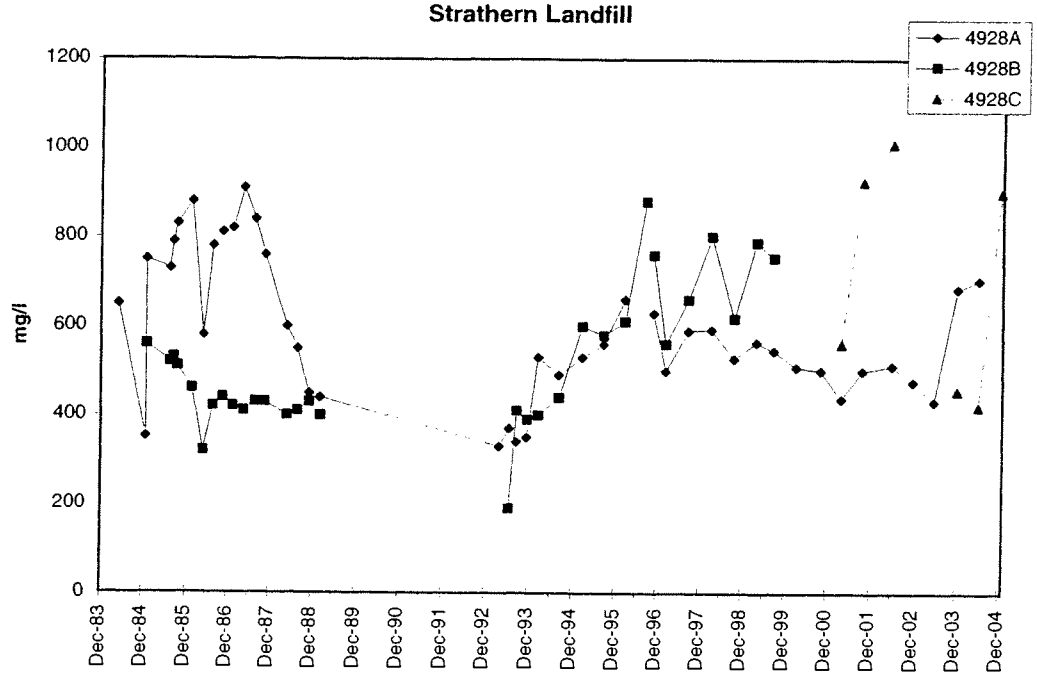
Data Qualifiers and Descriptors

ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

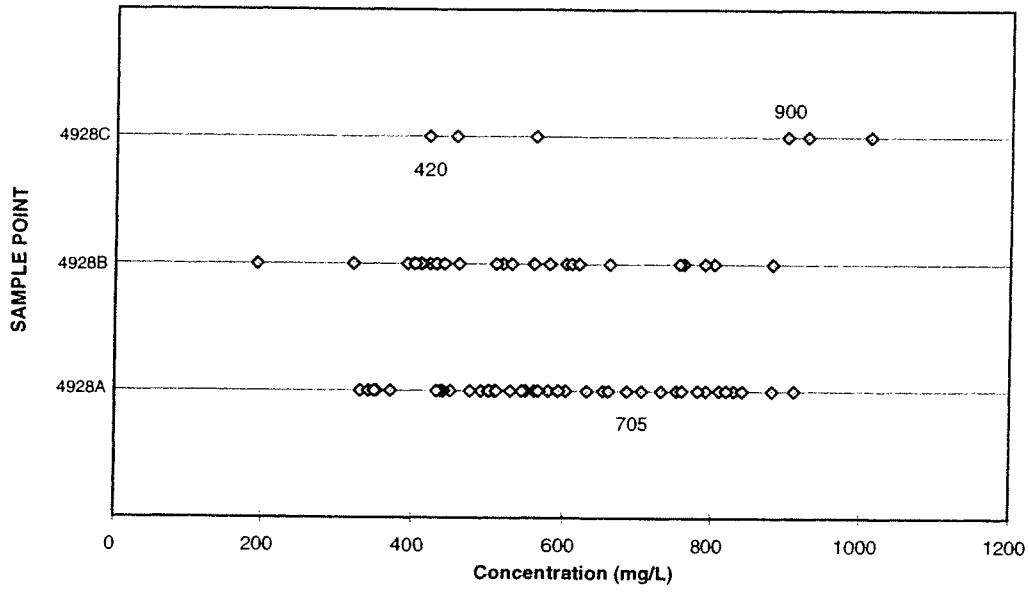
APPENDIX D

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

Total Dissolved Solids History
Strathern Landfill



Total Dissolved Solids
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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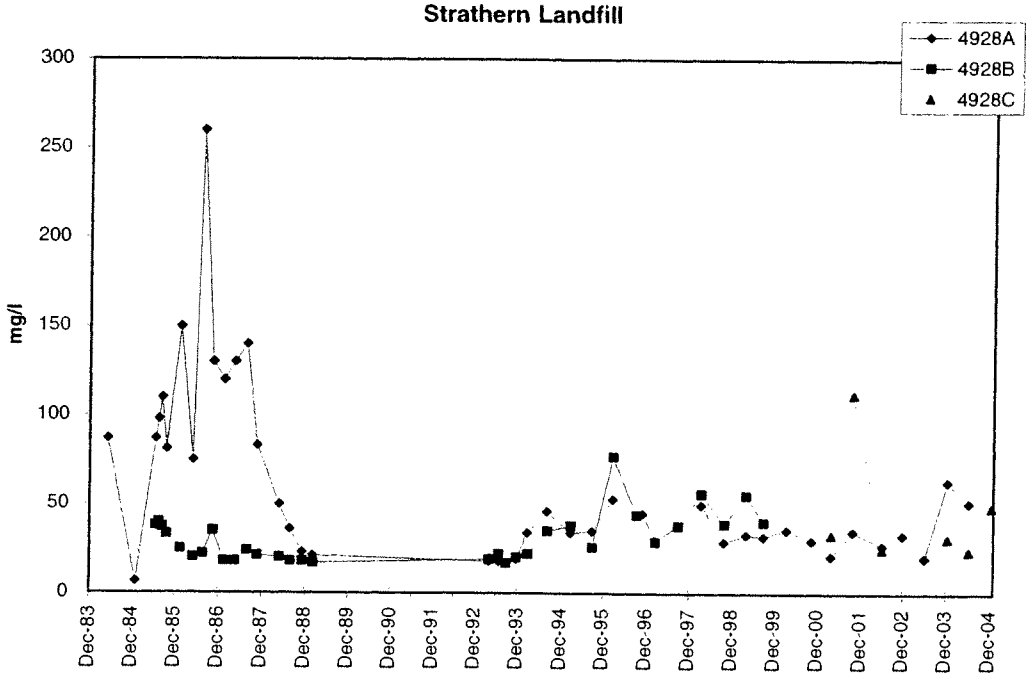
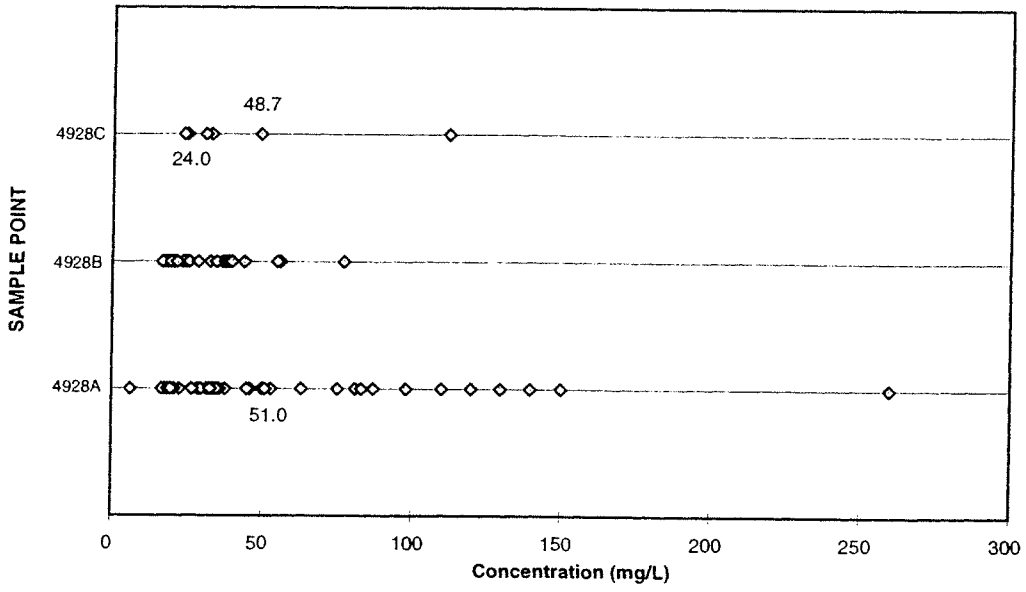
Chloride History
Strathern Landfill



Chloride
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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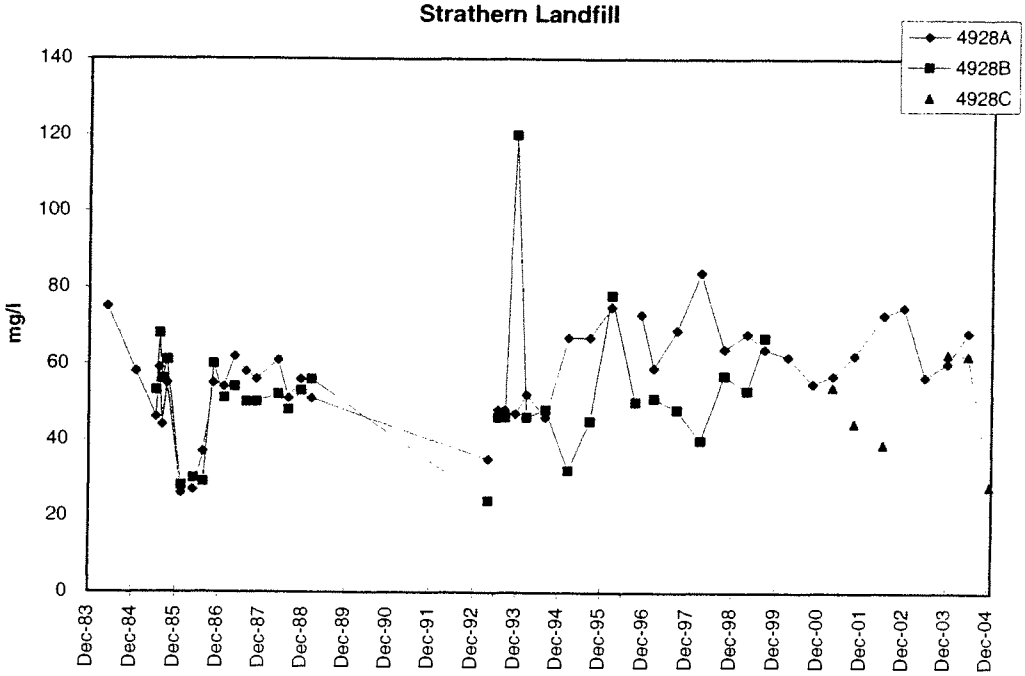
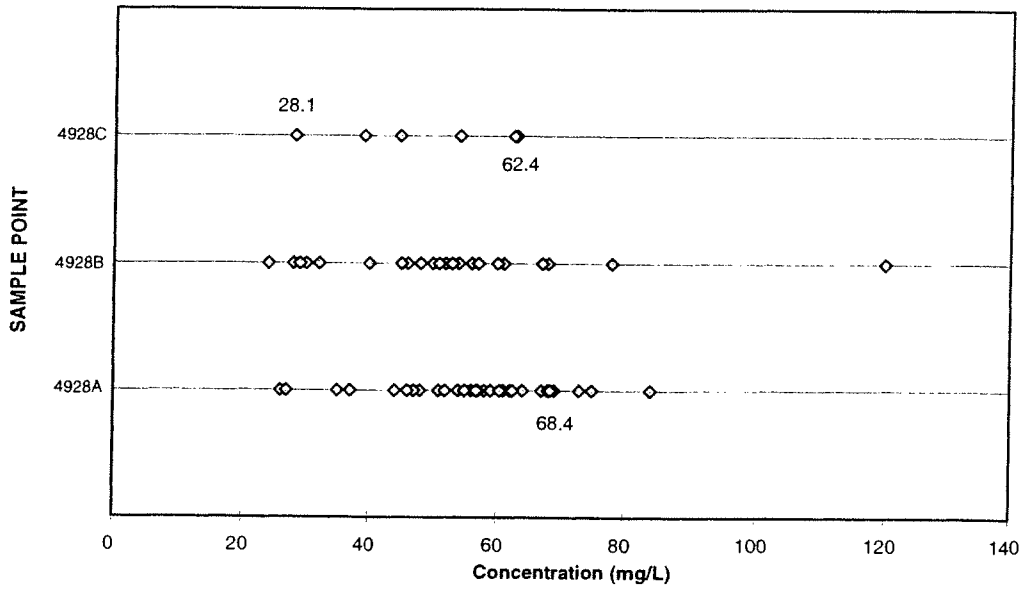
Sulfate History
Strathern Landfill



Sulfate
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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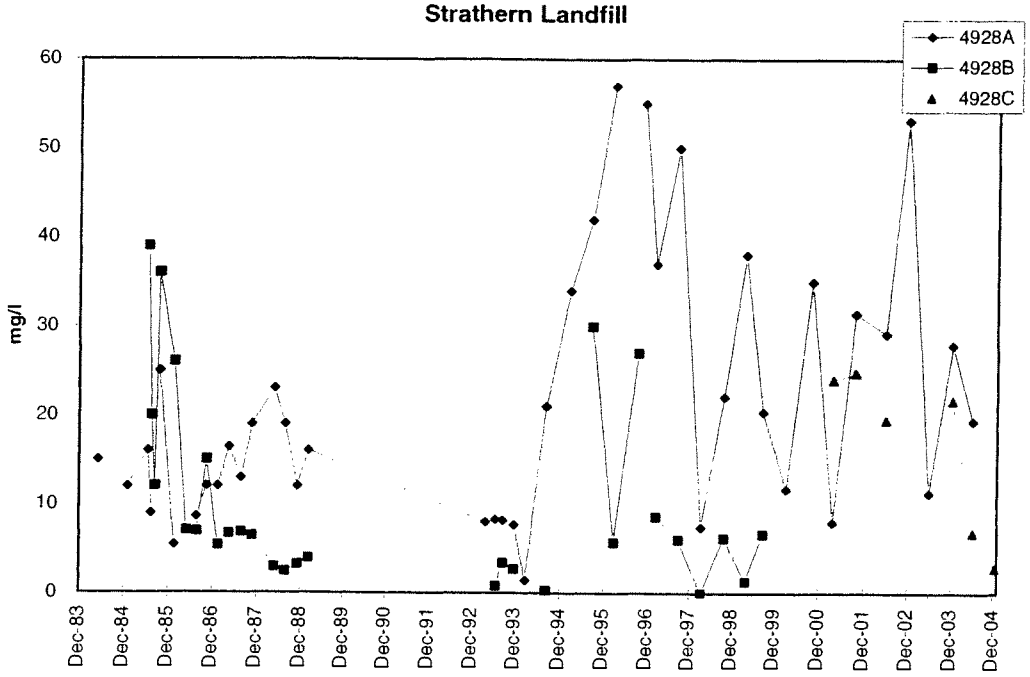
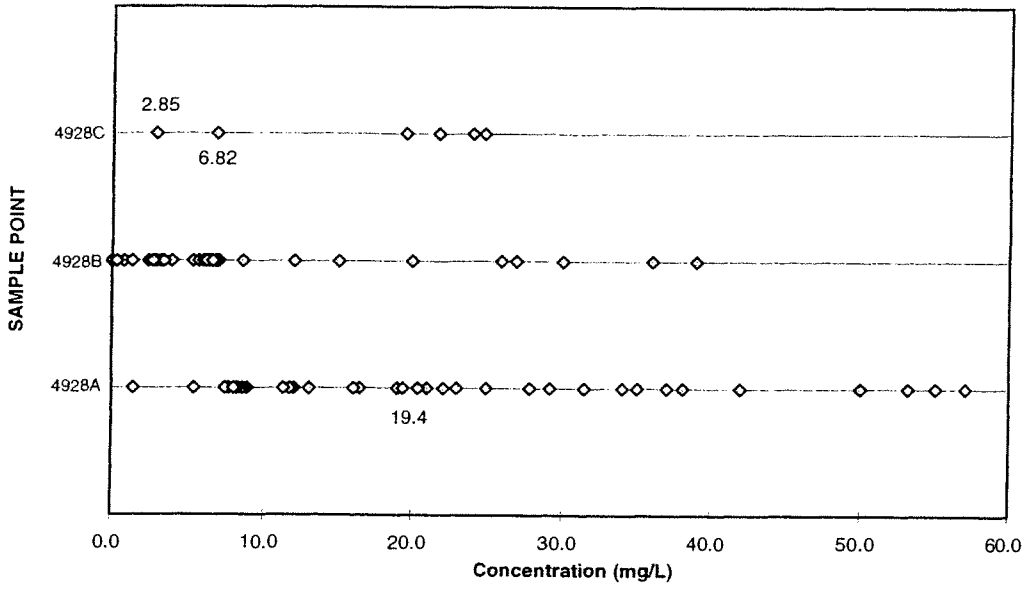
Nitrate History
Strathern Landfill



Nitrate
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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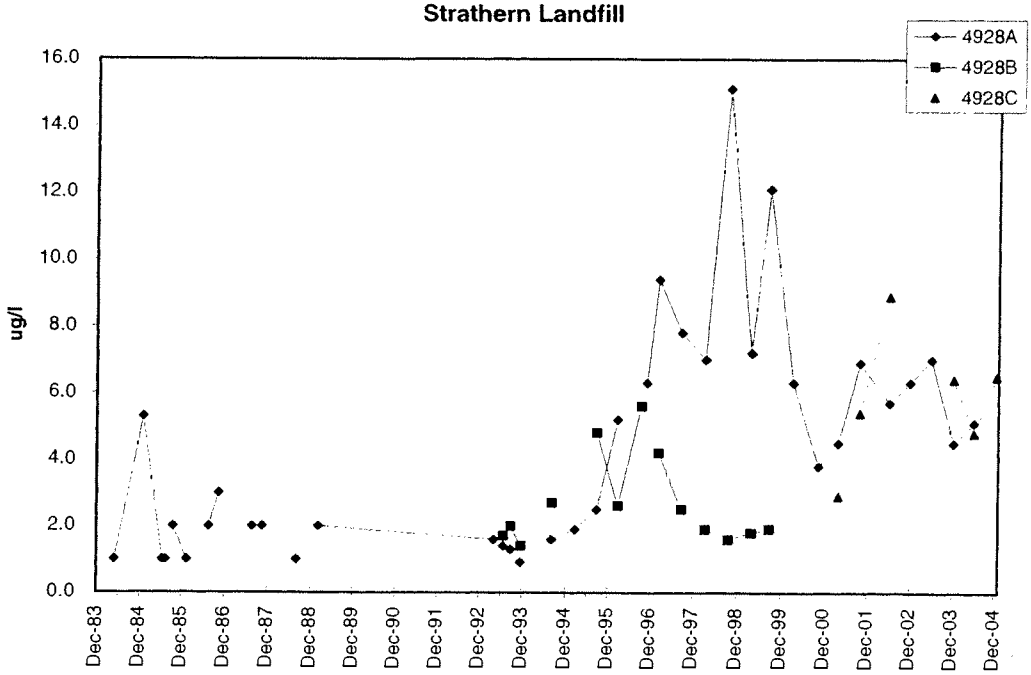
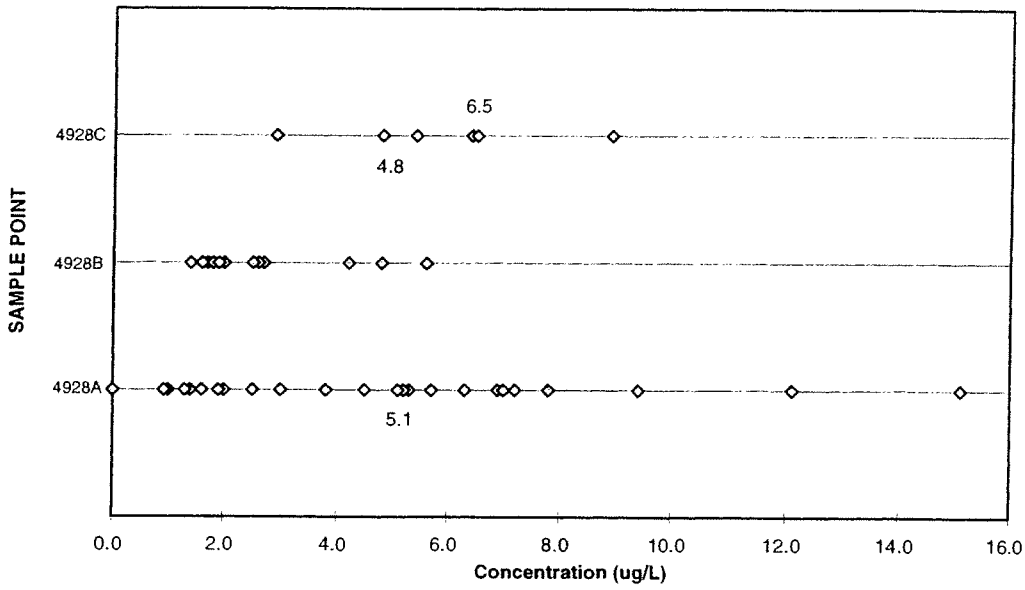
002871

PCE History
Strathern Landfill



PCE
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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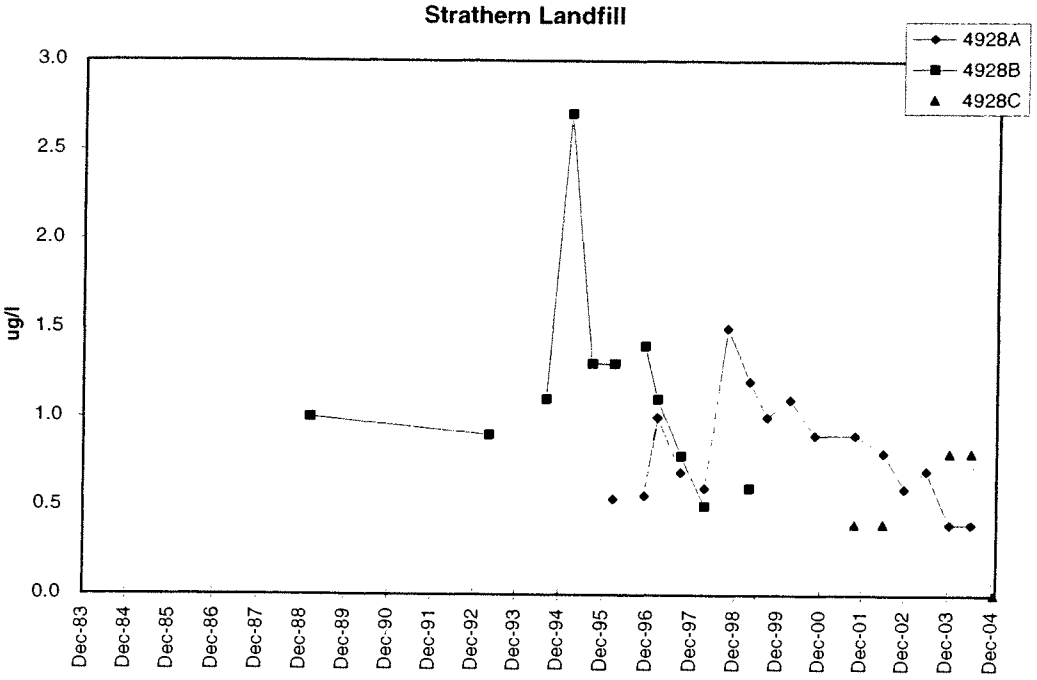
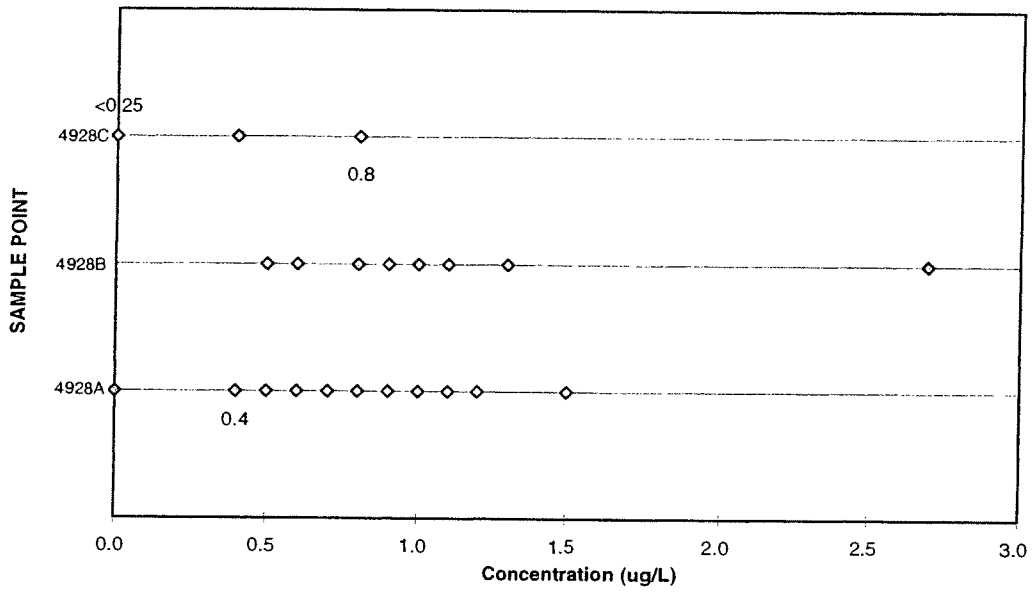
002872

TCE History
Strathern Landfill



TCE
Statistical Distribution



Data labels are for 2004 monitoring year. Label below grouping is 2nd quarter data; label above grouping is 4th quarter data.

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FIRST 2005 SEMI-ANNUAL GROUNDWATER MONITORING REPORT (JANUARY – JUNE)

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB Order No. 91-086
File No. 58-137
CI No. 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY
Los Alamitos, California

Prepared by

URS Corporation
Rancho Cucamonga, California

URS Project No. 38000854

July 15, 2005

URS

002874

URS

July 15, 2005

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA. 90720-3482

Subject: **First 2005 Semi-Annual Groundwater Monitoring Report**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB File No. 58-137, Order No. 91-086, CI No. 7055
URS Project No. 38000854

Dear Mr. McAllister:

INTRODUCTION

The URS Corporation (URS) is pleased to present this report summarizing the first 2005 semi-annual groundwater-monitoring event conducted at the Strathern Landfill located at 8230 Tujunga Avenue, Sun Valley, California, (Site). The groundwater monitoring activities were performed to satisfy the requirements of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Waste Discharge Requirements (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) CI-7055 adopted by the RWQCB on December 2, 1991. The MRP requires semi-annual monitoring of groundwater quality and requested that reports be submitted on January 15 and July 15. This report describes the Site activities, and presents analytical results generated from the groundwater samples collected on June 9, 2005 from the Strathern Landfill. A Site location map is provided as Figure 1. A monitoring well location map is included as Figure 2.

BACKGROUND

This section presents background information including a description of the site, monitoring requirements as adopted by the RWQCB and the groundwater monitoring well network.

SITE DESCRIPTION

The Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The Strathern Landfill is located adjacent to Penrose and Newberry Landfills as is shown on Figure 2. The landfill accepts solid inert waste consisting of uncontaminated soils, broken concrete, brick and aggregates. The site consists of 34.7 acres and has a capacity of 6,907,000 cubic yards.

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MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992 and opened for business on September 21, 1992. Groundwater monitoring is conducted to satisfy the requirements of WDR Order 91-086, MRP CI-7055, adopted by the RWQCB on December 2, 1991. The MRP requires semi-annual sampling and reporting of groundwater quality and quarterly reporting of waste disposal. This report presents the results of the first 2005 semi-annual groundwater monitoring activities at the Strathern Landfill. Waste disposal quantities are presented in Table 3 - Quantities of Fill Deposited During 2005.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of wells 4928A, 4928B and 4928C. Monitoring consists of measuring the groundwater levels, purging and sampling the monitoring wells. Figure 2 shows the monitoring well locations and Table 1 presents the monitoring well construction details.

FIRST 2005 SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

This section presents the first 2005 semi-annual monitoring results including groundwater level measurement and sampling procedures, measurement data, and laboratory analytical results for June 2005. This monitoring event consisted of measuring and sampling the groundwater from the three existing wells (4928A, 4928B and 4928C) located on the site. Monitoring well 4928A is the downgradient well, while monitoring wells 4928B and 4928C are upgradient wells.

GROUNDWATER MEASURMENT AND SAMPLING PROCEDURES

Prior to collecting a groundwater sample, the depth to groundwater was measured to an accuracy of 0.01 feet in each monitoring well using an electronic water interface probe. The groundwater interface probe was decontaminated after use in each well using a solution consisting of laboratory grade detergent and distilled water.

To ensure that the water samples collected were representative of formation conditions, each monitoring well was purged of a minimum of three well volumes using the dedicated submersible pump located in each well. During the purging process, water quality parameters of pH, electrical conductivity (EC) and temperature were measured to monitor the effectiveness of removing stagnant water from each well. These parameters as well as the depth to groundwater measurements were noted on a Sample Collection Record generated for each well sampled. The Sample Collection Records are presented in Appendix B of this report. After purging, water levels in each well were allowed to recover to near static conditions.

Following the purging activities, groundwater samples were collected using the respective dedicated submersible pump for each well and were then placed into sample bottles provided by American Environmental Testing Laboratory, Inc. (AETL), a California state-certified laboratory. Upon collection, the groundwater samples were placed on wet ice in a cooler and recorded on the chain of custody form. The groundwater samples were delivered to AETL

URS

approximately one hour after the last sample was collected. The samples were maintained on ice from the time they were collected until they were delivered to the laboratory. Holding times and preservative conditions were met for all of the samples delivered.

AETL was directed to analyze the samples for general minerals, volatile organic compounds (VOCs), chemical oxygen demand (COD) and for the metals boron, cadmium, chromium, lead and nickel.

GROUNDWATER LEVEL MEASUREMENT RESULTS

Between December 2004 and June 2005, groundwater levels have increased 37.62 feet in monitoring well 4928A and 7.05 feet in monitoring well 4928C. Monitoring well 4928B has been dry since the first quarter of 2000 and was observed to be dry during this groundwater-monitoring event. Table 2 presents the groundwater level measurement data in tabular form.

The increasing groundwater levels observed in monitoring wells 4928A and 4928C are likely due to the near record rainfall received in the Los Angeles region since the last groundwater-monitoring event conducted in December of 2004. Figure 3 presents a Hydrograph based on the groundwater level data collected from monitoring wells 4928A, 4928B and 4928C.

A groundwater contour map was not prepared or flow velocities calculated for June of 2005 based on the lack of groundwater level data from monitoring well 4928B (third data point). However, the groundwater flow direction has historically been calculated to flow toward the south-southwest.

GROUNDWATER SAMPLE RESULTS

Groundwater samples were collected from monitoring wells 4928A and 4928C on June 9, 2005. Monitoring well 4928B was not sampled because it was dry.

URS measured carbon dioxide (CO_2), temperature, alkalinity, pH and EC in the field. Laboratory analysis were conducted on the samples for general minerals, VOCs, COD and for the metals; boron, cadmium, chromium, lead and nickel. The groundwater database in Appendix A contains the results of field and laboratory analyses for June 2005, as well as historical analysis results. Appendix B contains the Sample Collection Records for the June 2005 sampling event. Appendix C contains the analytical results and chain-of-custody records from AETL for the groundwater samples collected in June 2005. Appendix D presents a graphical representation of the water quality history and statistical distribution for total dissolved solids, chloride, sulfate, nitrate, tetrachloroethylene (PCE) and trichloroethylene (TCE).

Inorganics

Laboratory analytical results indicate that groundwater collected in June of 2005 meets the California Drinking Water Standards except for total dissolved solids (TDS) in the sample from well 4928C. The laboratory analysis results from well 4928C indicated a TDS concentration of 656 milligrams per liter (mg/L) compared with the Drinking Water Standard of 500 mg/L. Total dissolved solids concentrations in wells 4928A and 4928C decreased from 705 mg/L to 408 mg/L and 900 mg/L to 656 mg/L respectively from June 2004 to June 2005. This decrease may

be related to the infiltration of the near record amount of precipitation experienced in the Los Angeles region since the last groundwater-monitoring event. Table 4 presents the groundwater sample analysis results for June 2005 as compared to the California Drinking Water Standards.

Organics

Laboratory analyses indicate that the organic constituents for the samples collected in June 2005 meet the water quality criteria for the California Drinking Water Standards with the exception of PCE detected at 5.25 micrograms per liter (μg/L) in well 4928C. The MCL for PCE is 5.0 μg/L.

CONCLUSIONS

Groundwater at the Strathern Landfill was measured and sampled using two groundwater-monitoring wells located on-site. Field measurements indicate that between December 2004 and June 2005, groundwater levels have increased approximately 37 feet in monitoring well 4928A and seven feet in monitoring well 4928C. Monitoring well 4928B has been dry since the first quarter of 2000 and was observed to be dry during this groundwater-monitoring event. The increasing groundwater levels observed are likely due to the near record rainfall received in the Los Angeles region since the last groundwater-monitoring event was conducted in December of 2004.

Inorganic groundwater quality meets the California Drinking Water Standards for the parameters measured, except for TDS in the sample from monitoring well 4928C. Organic constituents for the samples collected in June 2005 meet the water quality criteria for the California Drinking Water Standards with the exception of PCE detected slightly above the MCL in well 4928C. The concentrations of organic constituents in on-site wells are similar to previous monitoring events.

There does not appear to be a correlation between the landfill operations and the constituents detected in the groundwater. Because the landfill only receives inert solid waste and the amount of water-soluble material is negligible, URS believes the potential for leachate from the landfill continues to be low. The groundwater-monitoring program will continue at the Strathern Landfill semi-annually.

-oOo-

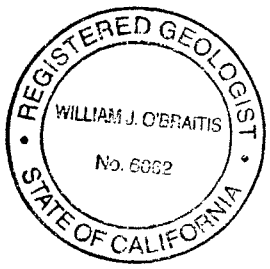
URS

We trust this letter report meets your needs, and we appreciate the opportunity to be of assistance to Los Angeles By-Products. If you should have any questions regarding this report, please contact the undersigned at (909) 980-4000.

Respectfully Submitted,
URS CORPORATION

Mike W. Makerov
Geologist

William J. O'Braitis, R.G., C.E.G.
Senior Geologist



cc: Regional Water Quality Control Board – Technical Support Unit

CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Regional Board's requirements.

I declare under penalty of perjury that the foregoing information is true and correct. Executed this 15th day of July, 2005, at Burbank, California.

Tamara L. Villareal Asst. Sec./Treas. for
Robert McAllister
Vice President
Los Angeles By-Products Company

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (ft asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2 - Depth to Water Measurements

June 2005 Groundwater Elevation			
Well I.D.	Top of Casing Elevation (ft asl)	Depth to Groundwater (feet below top of casing)	Groundwater Elevation (ft)
4928A	803.78	315.58	488.20
4928B	823.09	>823.09 (dry)	>823.09 (dry)
4928C	823.37	329.75	493.62

Table 3: Quantities of Fill Deposited During 2005

Quarter	Month	Tons	Cubic Yards* (Approximate)
1	January	19,786	15,829
	February	12,207	9,766
	March	20,313	16,251
2	April	32,996	26,397
	May	35,193	28,155
	June	32,860	26,288
Totals		153,355	122,686

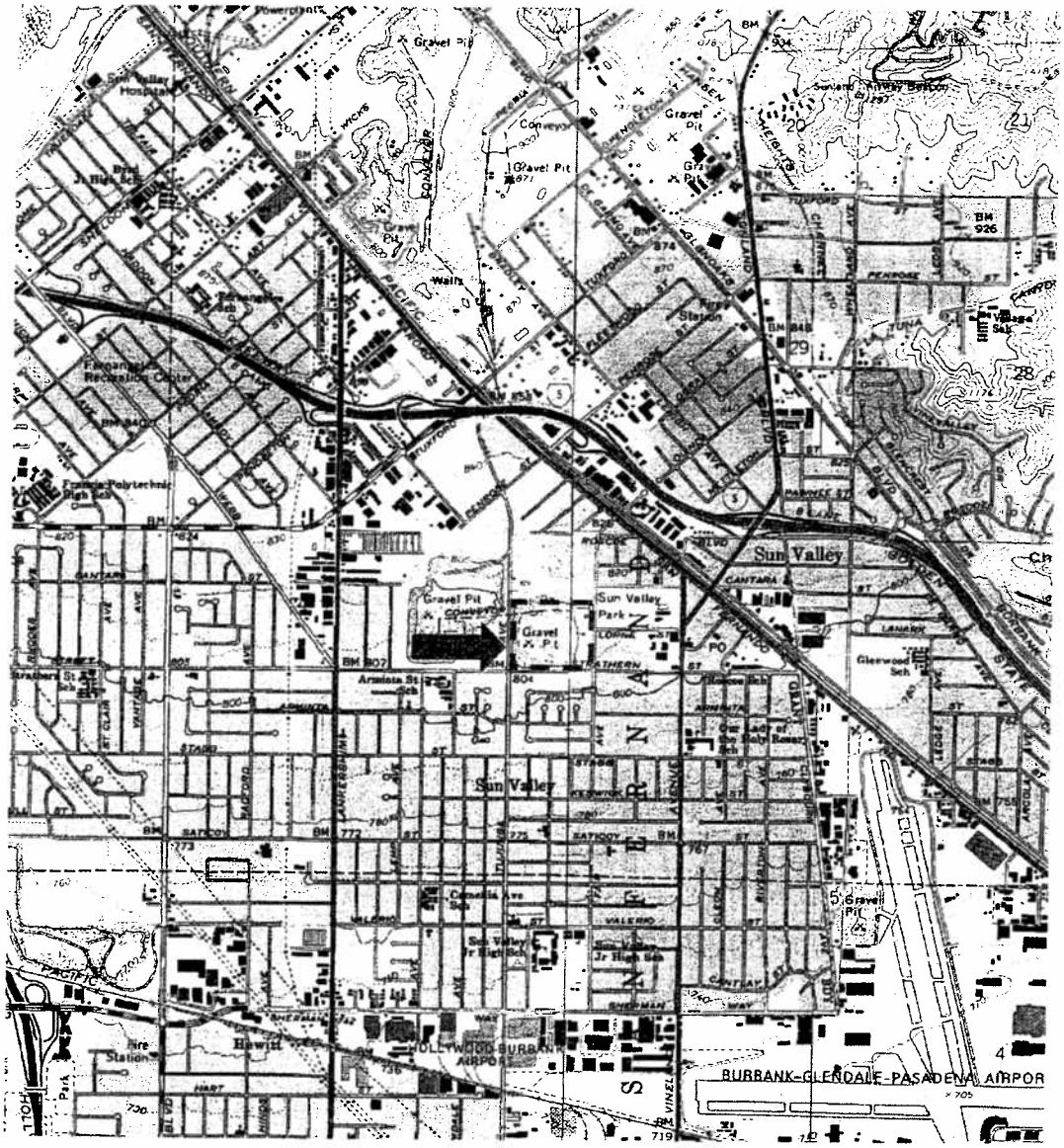
* 1.25 tons per cubic yard

Table 4: Site Water Quality vs. California Drinking Water Standards
June 2005

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source	
			4928A (downgradient)	4928C (upgradient)
Field Measurements				
pH		6-9	7.34	7.22
Temperature	°F	-	67.8	75.5
Electrical Conductivity	µmhos/cm	900*	721	1160
Carbon Dioxide	mg/L	-	36	66
Alkalinity	mg/L	-	300	250
Inorganic				
pH		6-9	7.04	6.95
Electrical Conductivity	µmhos/cm	900*	676	1065
Alkalinity	mg/L	-	248	388
Total Dissolved Solids (TDS)	mg/L	500*	408	656
Chloride (Cl)	mg/L	250*	23.9	56.2
Sulfate (SO4)	mg/L	250*	74.0	75.9
Nitrate (NO3)	mg/L	45	2.25	5.5
Boron (B)	mg/L	1**	0.174	0.24
Chemical Oxygen Demand (COD)	mg/L	-	<5	<5
Bicarbonate (HCO3)	mg/L	-	248	388
Iron (Fe)	mg/L	0.3*	0.089	<0.02
Carbonate (CO3)	mg/L	-	<1	<1
Cadmium (Cd)	µg/L	5	<5	<5
Chromium (Cr)	µg/L	50	<10	<10
Lead (Pb)	µg/L	15**	<15	<15
Nickel (Ni)	µg/L	100	<10	<10
Organic				
Benzene	µg/L	1	<0.25	<0.25
Trichloroethylene (TCE)	µg/L	5	0.70	0.67
Tetrachloroethylene (PCE)	µg/L	5	4.58	5.25
Vinyl Chloride (VC)	µg/L	0.5	<0.25	<0.25

1 – Source: CCR, Title 22, Division 4, Chapter 15
** - Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*
*** - Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have*

FIGURES



SITE LOCATION MAP

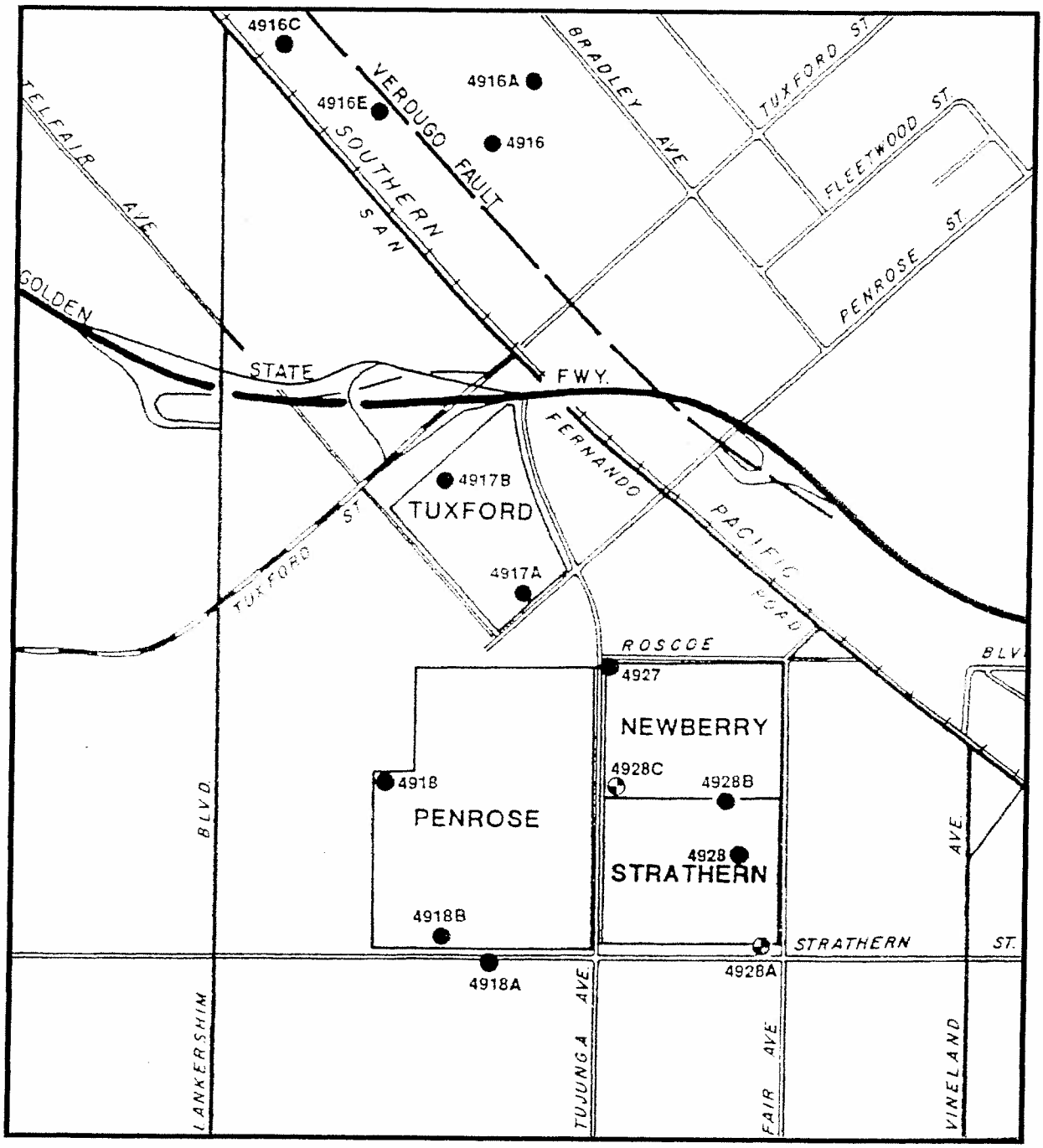
LOS ANGELES BY-PRODUCTS COMPANY
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

REFERENCES: USGS 7.5 Minute Series Quadrangles, Burbank and Van Nuys, California, 1966 (Photorevised 1972).
SCALE: 1:24,000

URS

FIGURE 1

002885



Explanation:

- 4928A Monitoring Well Location
- 4918B Other Well Location

Approximate Scale:

0' 2000'

Scale in Feet

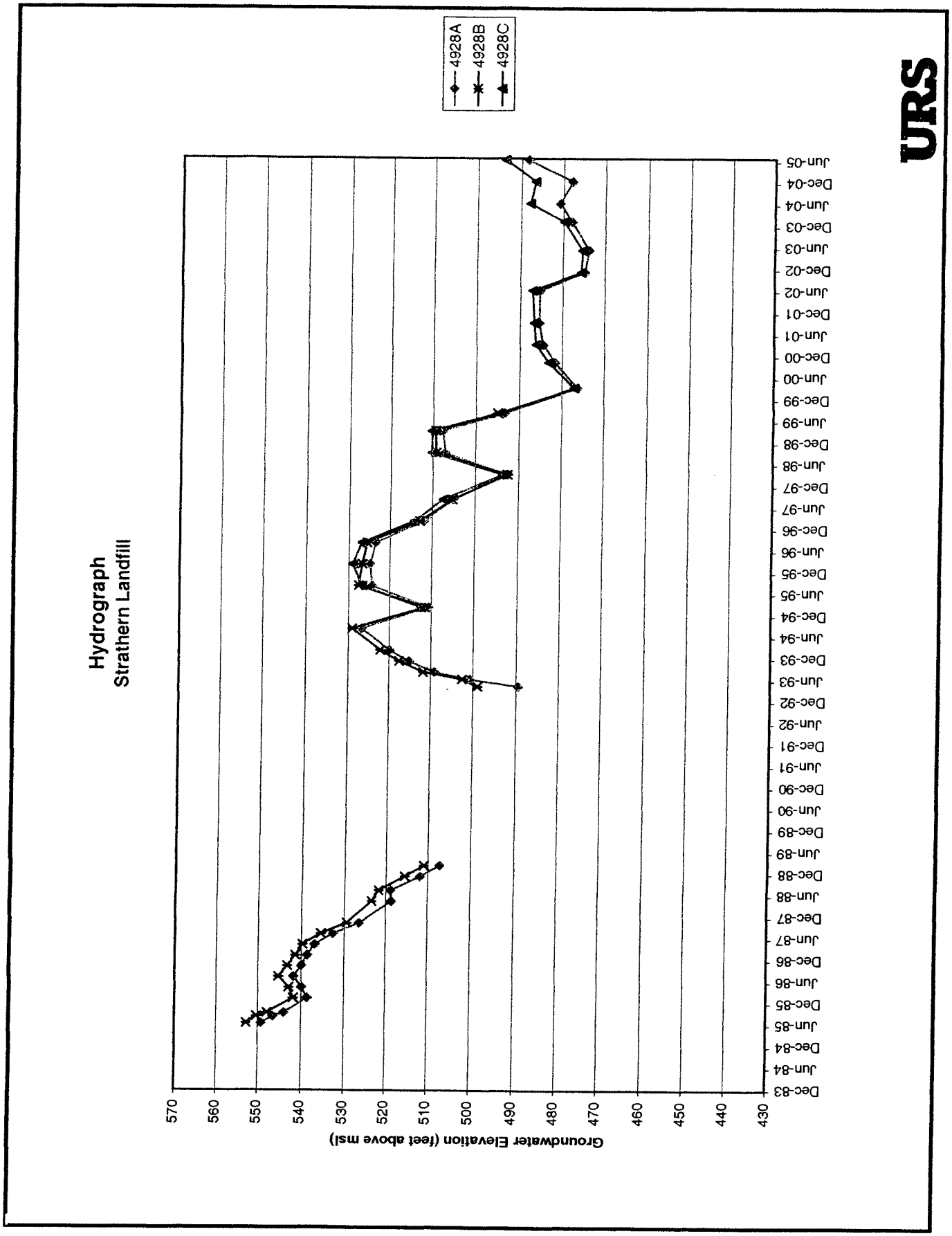
MONITORING WELL LOCATION MAP

Los Angeles By-Products Company
Strathern Landfill
Sun Valley, California

URS

FIGURE 2

002886


Hydrograph
Strathern Landfill
URS
4928A
4928B
4928C
Groundwater Elevation (feet above msl)
570
560
550
540
530
520
510
500
490
480
470
460
450
440
430
Dec-83
Jun-84
Dec-84
Jun-85
Dec-85
Jun-86
Dec-86
Jun-87
Dec-87
Jun-88
Dec-88
Jun-89
Dec-89
Jun-90
Dec-90
Jun-91
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Dec-97
Jun-98
Dec-98
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
Dec-04
Jun-05

Figure 3

GROUNDWATER DATABASE

CONFIDENTIAL

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 38000854.10000

POINT	DATE	WATER LEVEL	FIELD MEASUREMENTS					GENERAL MINERALS												GENERAL MINERALS (cont.)								ORGANICS				METALS				LAB SOURCE
		REF PT. W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	
	UNITS	FT. ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs		6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	803.78							7.20	120	28	48	6.0	0.0	363	75	65	15.0			650			1			1.0		0.70	#REF!	0.050	B&C
4928A	31-Dec-84							560	7.70	73	16	26	4.2	0.0	280	58	7	12.0			351		44	5.3				0.22			B&C
4928A	19-Jun-85	549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	<1	1				<0.09			B&C
4928A	17-Jul-85	547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	<1	1				0.06			B&C
4928A	14-Aug-85	546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610	44	110	<0.44	0.8		790	<0.05						<0.046			B&C
4928A	19-Sep-85	543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	37	2				<0.042			B&C
4928A	16-Jan-86	538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	<1	1				<0.063			B&C
4928A	29-Apr-86	539.84	6.6	66	900	66.0	350	1100	7.80	170	27	63	7.6	0.0	488	27	75	<4			580		<1	<1				<0.2			B&C
4928A	22-Jul-86	541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	<1	2				<0.2			B&C
4928A	15-Oct-86	539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490	55	130	12.0	0.6		810	<0.05	<1	3			<10	<0.1	<20		B&C
4928A	14-Jan-87	538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590	54	120	12.0	0.8		820	<0.05	<1	<1			<10	<0.03	<20	<0.06	B&C
4928A	15-Apr-87	536.86	5.8	69	1100	42.5	490	1500	6.80	170	44	85	6.6	<0.6	650	62	130	16.4	0.8		910	<0.05	<1	<1			<10	<0.02	<10	<0.04	B&C
4928A	24-Jul-87	803.1 532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	<1	2			<20	<0.02	<20	<0.04	B&C
4928A	21-Oct-87	526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590	56	83	19.0	0.63		760	<0.05	<1	2			<20	0.12	<10	<0.04	B&C
4928A	29-Apr-88	518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6.4	<0.6	480	61	50	23.0	0.3		600	11.0	<1	<1			<20	0.32	4	<0.004	B&C
4928A	28-Jul-88	518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442	51	36	19.0	0.34		550	10.0	<1	1			<1	<0.02	<2	<0.04	B&C
4928A	08-Nov-88	511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370	56	23	12.0	0.22		450	<3	<1	<1			<1	<0.02	<2	<0.04	B&C
4928A	07-Feb-89	803.78 507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350	51	21	16.0	0.05		440	<5	<1	2			<1	0.92	7	<0.04	B&C
4928A	02-Apr-93	489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320	35	18	8			330	<6	<0.5	1.6			<1	0.20	5	<0.04	B&C
4928A	22-Jun-93	500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290	48	18	8.3			370	7.7	<1	1.4			<1	0.12	3	<0.04	B&C
4928A	24-Aug-93	509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290	48	17	8.2			340	<6	<1	1.3			<1	0.17	4	<0.04	B&C
4928A	19-Nov-93	515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290	47	19	7.7			350	<6	<0.5	0.9			<1	0.13	3	<0.04	B&C
4928A	21-Feb-94	519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430	52	34	1.4	0.3		530		<0.5	<0.5			<1	0.76	4	<0.04	B&C
4928A	05-Aug-94	526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330	46	46	21	0.26		490		<0.5	1.6			<3	0.42	5	<0.005	B&C
4928A	20-Feb-95	510.49						830	6.90	97	25	36	5.3	<0.6	390	67	34	34	<0.05		530	21	<0.5	1.9			<5	7.80	99	<0.04	B&C
4928A	24-Aug-95	524.22	7.00	66	650	100	386	900	6.90	100	25	43	5.4	<10	330	67	35	42	0.29		560	<6	<0.2	2.5			<5	0.35	10	0.073	B&C
4928A	23-Feb-96	524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380	75	53	57	0.32		660	<6	0.54	5.2			<1	2.80	27	<0.04	B&C
4928A	23-Aug-96	523.41																														
4928A	11-Sep-96	NM																														
4928A	31-Oct-96	516.47	7.40	65.4	995	130	348	960	7.10	120	30	47	6.4	<10	380	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	511.81	7.20	65.2	830	50	420	850	6.90	100	27	37	5.6	0	390	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	26-Aug-97	504.90	7.00	66.9	825	34	372	890	6.60	110	27	41	5.5	0	400	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	492.23	7.30	68.3	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	507.01	7.17	65.9	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	507.59	7.60	70.2	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324	68	33	38	0.3		565	<6	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	493.23	7.46	66.9	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	476.16	7.25	64.0	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	481.63	6.76	67.1	800	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	484.40	7.44	65.1	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	485.40	8.10	68.2	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10[c]	0.23	<50	<0.01	AETL
4928A	05-Jun-02	485.26	7.65	65.5	766	26	363	761	7.20	88.6	24.1	34.5	15.8	<1	282	73	27	29.2	0.3	332	512	8[c]	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	474.58	6.90	65.3	722	32	336	824	7.13	99.4	26.1	35.3	5.5	<1	280	75	33	53.1	0.4	348	476	5.4[c]	0.6	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03	473.67	7.31	67.1	664	33	348	720	7.26	81.4	21.1	29.5	4.59	<1	284	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014[c]	0.215	<50	<10	AETL
4928A	10-Dec-03	449.97	7.40	66.8	1300	35	530	1120	7.06	147	35.7	38.7	5.37	<1	464	60.4	63	27.9	0.512	575	685	13.7	0.4[c]	4.5	<0.25	<0.25	<5	12[c]	<0.02	<15	<10	AETL
4928A	08-Jan-04	477.78																														
4928A	08-Jun-04	450.35	7.31	68.0	1070	43	380	1120	6.99	135	33.0	37.6	5.74	<1	456	68.4	51.0	19.4	0.520	528	705	<5	0.7	5.1	<0.25	<0.25	<5	15[c]	<0.02	<15	<10	AETL
4928A	17-Dec-04	450.58																														
4928A	09-Jun-05	488.20	7.34	67.8	721	36	300	676	7.04	79.3	20.3	30.4	4.84	<1	248	74.0	23.9	2.25	0.174	288	408	<5	0.7	4.58	<0.25	<0.25	<5	<10	0.089	<15	<10	AETL

002889

CONFIDENTIAL

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 38000854.10000

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS										GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	
	UNITS		FT. ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280	60	35	15.0	0.3		440	<0.05	<1	<1			<10		0.29	<20		B&C
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340	51	18	5.3	0.5		420	0.10	<1	2			<10		<0.03	<20	<0.06	B&C
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340	54	18	6.6	0.4		410	0.08	<1	2			<10		0.88	<10	<0.04	B&C
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<1	4			<20		<0.02	<20	<0.04	B&C
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370	50	21	6.4	0.25		430	<0.05	<1	<1			<20		0.20	<10	<0.04	B&C
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356	52	20	2.9	0.18		400	7.0	<1	3			<20		5.70	13	<0.004	B&C
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350	48	18	2.4	0.19		410	6.0	<1	4			<1		<0.02	<2	<0.04	B&C
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380	53	18	3.2	0.16		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02		400	<5	1	5			<1		2.20	3	<0.04	B&C
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230	24	19	<0.2			190	<6	0.90	<0.5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370	46	22	0.78			410	7.2	<1	1.7			1		14	24	<0.04	B&C
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370	46	17	3.4			390	<6	<1	2.0			<1		17	18	<0.04	B&C
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370	120	20	2.7			400	<6	<0.5	1.4			<1		82	3	<0.04	B&C
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25		440		<0.5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500	48	35	0.31	0.27		600		1.1	2.7			<3		7.9	17	<0.005	B&C
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<5	<10	2.4	16	<0.04	B&C
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690	78	77	5.7	0.53		880	32.0	1.3	2.6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96		525.61																															
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630	50	44	27	0.31		760		1.4	5.6			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502	40	56	<0.1	0.5		802	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438	57	39	6.2	0.3		618	<6	<0.5	1.6			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3		789	<6.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3		754	<6.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00		DRY																															
4928B	09-Oct-00		DRY																															
4928B	29-Mar-01		DRY																															
4928B	25-Sep-01		DRY																															
4928B	05-Jun-02		DRY																															
4928B	27-Nov-02		DRY																															
4928B	30-May-03		DRY																															
4928B	10-Dec-03		DRY																															
4928B	08-Jun-04		DRY																															
4928B	17-Dec-04		DRY																															
4928B	09-Jun-05		DRY																															
4928C	20-Feb-95	823.37	512.30																															
4928C	24-Aug-95		526.72																															
4928C	23-Feb-96		528.98																															
4928C	23-Aug-96		526.79																															
4928C	14-Feb-97		514.27																															
4928C	26-Aug-97		507.48																															
4928C	12-Mar-98		493.57																															
4928C	21-Sep-98		510.16																															
4928C	30-Mar-99		510.22																															
4928C	25-Aug-99		494.57																															
4928C	10-Mar-00		476.92																															
4928C	09-Oct-00		483.18																															
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02		475.52																															
4928C	30-May-03		475.27																															
4928C	10-Dec-03		487.65	7.45	67.5	680	30	340	756	7.24	88.6	22.3	31.4	4.47	<1	290	62.8	31	21.7	0.285	332	456	12.4	0.8	6.4	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	08-Jan-04		479.70																															
4928C	08-Jun-04		487.78	7.47	67.1	598	40	280	702	7.14	79.3	20.2	28.8	4.74	<1	272	62.4	24.0	6.82	0.283	302	420	7.78J	0.8	4.8	<0.25	<0.25	<5	14J	0.043J	<15	<10	AETL
4928C	24-Jun-04		487.78																															
4928C	17-Dec-04		486.57	7.14	66.9	1487	40	380	1,440	6.96	173	42.6	41.9	6.62	<1	600	28.1	48.7	2.85	0.436	680	900	<5.0	<0.25	6.5	<0.25	<0.25	<5	<10	<0.02	<50	<10	AETL
4928C	09-Jun-05		493.62	7.22	75.5	1160	66	250	1,065	6.95	134	32.7	40.1	6.19	<1	388	75.9	56.2	5.5	0.240	474	656	<5.0	0.67	5.25	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (P(

002900

SAMPLE COLLECTION RECORDS

W. R Q IT MP COL CTI REC D

LOCATION	
PROJECT NAME: G.W. Monitoring - Strathern Landfill	WELL NUMBER (SITE ID): 4928 A
PROJECT NUMBER:	DATE: 6-9-05
LOCATION:	SAMPLER(S): MWM
	WEATHER: Warm, Partly Cloudy

INSTRUMENTATION	PARAMETERS INSTRUMENTS CALIBRATION COMPLETED DATE: 6-9-05 TIME: 9:50 AM
pH METER (Brand, Model, S/N): See Sheet 1	WATER LEVEL METER (Brand, S/N):
pH CALIBRATION READINGAT: 4.0	7.0 10.0
CONDUCTIVITY METER (Brand, Model, S/N):	CALIBRATION SOLUTION USED: uS/cm

WELL INFORMATION	DEPTH TO WATER (DTW): 315' 7" BTOC feet BMP DATE: 6-9-05 TIME: 11:04
TAL DEPTH OF WELL (TD): — Feet BMP	TD – DTW: — feet CASING CAPACITY: — gal/ft
SCREENED INTERVAL: From — To — Feet BMP	CASING VOLUME (CV) = $(D/24)^2$ (3.14) (7.48) (TD – DTW) = gal
CASING TYPE: Steel CASING DIAMETER: 9 Inches	3 CV: — gal ~~3 CV~~ PURGE TIME: 10 min

WELL EVACUATION			EQUIPMENT: Submersible Pump						PUMP SET AT: — feet		
CLOCK TIME	ELAPSED TIME (min)	PUMPING RATE (gpm)	PURGED VOLUME (gal)	DTW (feet)	pH	SC (uS/cm)	TEMP (circle one) °C °F	COLOR	CLARITY	ODOR	COMMENTS
11:10	0	16	0		----------	----------	----------	----------	----------	----------	START PUMP
11:13	3	16	48		7.55	7.44×100	67.8°F	Clear	Clear	None	
11:17	7	16	112		7.39	7.30×100	68.8°F	Clear	Clear	None	
11:20	10	16	160	315' 5.5" BTOC	7.34	7.21×100	67.8°F	Clear	Clear	None	
Alkalinity ≈ 300 ppm			11:30								
CO_2 = 36 ppm			11:30								

SAMPLE COLLECTION	DATE: 6-9-05 TIME: 11:25 VOLUME PURGED: 160 gal
REQUESTED ANALYSES: VOCs General Minerals COD Cd, Cr, Pb, Ni, Boron	
CONTAINER TYPES: 2 1L Poly 2 40ml VOA	
FILTERED?: ☐ Yes ☒ No	FILTER EQUIPMENT: N/A
COMMENTS: See Sheet 1	SAMPLE TYPE: ☒ Primary ☐ Duplicate
SAMPLER SIGNATURE: [signature]	DATE: 6-9-05 ☐ Equipment Blank ☐ Field Blank ☐ Split Sample ☐ MS/MSD

• 4928 B is Dry

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W/ R Q IT MP COL CTI REC D

LOCATION	
PROJECT NAME: G.W. Monitoring - Strathern Landfill	WELL NUMBER (SITE ID): 4928 C
PROJECT NUMBER: 38000	DATE: 6-9-05
LOCATION: 8230 Tujunga Avenue, Sun Valley, CA.	SAMPLER(S): Mike Makeron
	WEATHER: Warm, Partly Cloudy

INSTRUMENTATION	PARAMETERS INSTRUMENTS CALIBRATION COMPLETED DATE: 6-9-05 TIME: 9:50 AM
pH METER (Brand, Model, S/N): Hydac 980741300	WATER LEVEL METER (Brand, S/N):
pH CALIBRATION READINGAT: 4.0 4.0	7.0 7.03 10.0 10.02
CONDUCTIVITY METER (Brand, Model, S/N): Hydac	CALIBRATION SOLUTION USED: Factory Calibration uS/cm

WELL INFORMATION	DEPTH TO WATER (DTW): 329' 9" BTOC feet BMP DATE: 6-9-05 TIME: 10:08 AM
TOTAL DEPTH OF WELL (TD): - Feet BMP	TD – DTW: - feet CASING CAPACITY: - gal/ft
SCREENED INTERVAL: From - To - Feet BMP	CASING VOLUME (CV) = $(D/24)^2$ (3.14) (7.48) (TD – DTW) = gal
CASING TYPE: Steel CASING DIAMETER: 9 Inches	3 CV: - gal ~~3 CV~~ PURGE TIME: 10 min

WELL EVACUATION	EQUIPMENT: Submersible Pump								PUMP SET AT: feet		
CLOCK TIME	ELAPSED TIME (min)	PUMPING RATE (gpm)	PURGED VOLUME (gal)	DTW (feet)	pH	SC (uS/cm)	TEMP (circle one) °C °F	COLOR	CLARITY	ODOR	COMMENTS
10:11	0		0		----------	----------	----------	----------	----------	----------	START PUMP
10:15	4	10	40		7.93	1.13x1000	74.1°F	Clear	Clear	None	
10:20	9	10	90		7.59	1.10x1000	69.7°F	Clear	Clear	None	
10:23	12	10	120	329'10" BTOC	7.22	1.16x1000	75.5°F	Clear	Clear	None	
CO_2	10:30 = 66 ppm										
Alkalinity	10:30 ~ 250 ppm										

SAMPLE COLLECTION	DATE: 6-9-05 TIME: 10:35 VOLUME PURGED: 120 gal
REQUESTED ANALYSES: VOC's General Minerals COD Cd Cr, Pb, Ni, Boron	
CONTAINER TYPES: 2 1L Poly 2 40 ml VOA	
FILTERED?: ☐ Yes ☒ No	FILTER EQUIPMENT: N/A
COMMENTS: Purged Well For 10-Minutes as Per Client Direction and Historical Technique	SAMPLE TYPE: ☒ Primary ☐ Duplicate
SAMPLER SIGNATURE: [signature] DATE: 6-9-05	☐ Equipment Blank ☐ Field Blank ☐ Split Sample ☐ MS/MSD

4-27-05

002893

~~\\3008NT03\DM PROJ\09448\357\WATER QUALITY SAMPLE COLLECTION RECORD.doc~~

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LABORATORY ANALYTICAL REPORT

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

URS Corporation
10723 Bell Court
Rancho Cucamonga, CA 91730-

Telephone: (909)980-4000
Attention: Bill O'Braitis

Number of Pages 14
Date Received 06/09/2005
Date Reported 06/27/2005

Job Number	Order Date	Client
33727	06/09/2005	URS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring
Site: 8230 Tujunga Avenue
Sun Valley, CA 91352

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

CHAIN OF CUSTODY RECORD

№ 39141

AETL JOB No. 33727

Page 1 of ___

COMPANY: URS Corporation
PHONE: 909 980 4000
PROJECT MANAGER: Bill O'Braitis
FAX: 909 980 1399
PROJECT NAME: G.W. Monitoring - Strathern Landfill
PROJECT #:
SITE NAME AND ADDRESS: 8230 Tujunga Avenue, Sun Valley, CA.

ANALYSIS REQUESTED

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	VOC's	General Minerals	COD	Cd, Cr, Pb, Ni, Boron					TEST INSTRUCTIONS & COMMENTS
1	4928 C	33727.01	6.9.05	10:35	H_2O	4	1 HCl	X	X	X	X					Contacted Jim Lin For Analysis Methods.
2	4928 A	33727.02	6.9.05	11:25	H_2O	4	1 HCl	X	X	X	X					
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	8	PROPERLY COOLED (Y) / N / NA	
CUSTODY SEALS Y / N / (NA)		SAMPLES INTACT (Y) / N / NA	
RECEIVED IN GOOD COND (Y) / N		SAMPLES ACCEPTED (Y) / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Mike Makoran	Printed Name:	Printed Name:
Date: 6-9-05 Time: 1320	Date: Time:	Date: Time:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Jim Lin	Printed Name:	Printed Name:
Date: 6-9-05 Time: 1320	Date: Time:	Date: Time:

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

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Telephone: (909)980-4000
Attn: Bill O'Braitis

Site

8230 Tujunga Avenue
Sun Valley, CA 91352

Page: 2

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 200.7, Boron by ICP

QC Batch No: 061305-2

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/13/2005	06/13/2005	06/13/2005		
Preparation Method			200.2	200.2	200.2		
Date Analyzed			06/13/2005	06/13/2005	06/13/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	MDL	PQL	Results	Results	Results		
Boron	0.050	0.100	ND	0.240	0.174		

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Site

8230 Tujunga Avenue
Sun Valley, CA 91352

Page: 3

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 200.7, Metals

QC Batch No: 061305-2

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/13/2005	06/13/2005	06/13/2005		
Preparation Method			200.2	200.2	200.2		
Date Analyzed			06/13/2005	06/13/2005	06/13/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	MDL	PQL	Results	Results	Results		
Cadmium	0.005	0.050	ND	ND	ND		
Chromium	0.01	0.05	ND	ND	ND		
Lead	0.015	0.100	ND	ND	ND		
Nickel	0.01	0.05	ND	ND	ND		

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Site

8230 Tujunga Avenue
Sun Valley, CA 91352

Page: 4

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QC Batch No: 060905

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/09/2005	06/09/2005	06/09/2005		
Preparation Method			410.4	410.4	410.4		
Date Analyzed			06/09/2005	06/09/2005	06/09/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Chemical Oxygen Demand	5.0	10.0	ND	ND	ND		

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ANALYTICAL RESULTS

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Rancho Cucamonga, CA 91730-

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Site

8230 Tujunga Avenue
Sun Valley, CA 91352

Page: 5

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062305

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/23/2005	06/23/2005	06/23/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			06/23/2005	06/23/2005	06/23/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Acetone	0.5	1.0	ND	ND	ND		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
2-Butanone (MEK)	0.5	1.0	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon Disulfide	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.25	0.50	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.25	0.50	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	4.37	1.23		

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ANALYTICAL RESULTS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062305

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/23/2005	06/23/2005	06/23/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			06/23/2005	06/23/2005	06/23/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	MDL	PQL	Results	Results	Results		
1,1-Dichloroethane	0.25	0.50	ND	2.43	1.72		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	1.65	ND		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.31J	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
2-Hexanone	0.5	1.0	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND	ND		
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.25	0.50	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	5.25	4.58		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.67	0.70		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.25	0.50	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062305

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/23/2005	06/23/2005	06/23/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			06/23/2005	06/23/2005	06/23/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	MDL	PQL	Results	Results	Results		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl Acetate	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-Xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		
Total trihalomethane compounds	0.25	0.50	ND	ND	ND		
Our Lab I.D.				33727.01	33727.02		
Surrogates	%Rec.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		95	97	94		
1,2-Dichlorobenzene	75-125		100	101	96		

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Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: GEN.-MINERALS, General Minerals

QC Batch No: 060905

Our Lab I.D.			Method Blank	33727.01	33727.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				06/09/2005	06/09/2005		
Date Prepared			06/09/2005	06/09/2005	06/09/2005		
Preparation Method			VARIOUS	VARIOUS	VARIOUS		
Date Analyzed			06/13/2005	06/13/2005	06/13/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bicarbonate (as CaCO3)	1	2	ND	388	248		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	388	248		
Anions Total (meq/L)	0.01	0.01	NA	7.30	11.3		
Cations Total (meq/L)	0.01	0.01	NA	7.00	11.3		
Ion Balance (percent difference)	0.01	0.01	NA	2.09	ND		
Chloride (Cl), Total	0.5	1.0	ND	56.2	23.9		
Conductivity (umhos/cm @77F)	5	10	ND	1,065	676		
Fluoride, Total	0.1	0.2	ND	ND	0.15J		
Hardness (Ca,Mg) as CaCO3	1	2	ND	474	288		
Nitrate as Nitrogen	0.05	0.10	ND	5.50	2.25		
Nitrite as Nitrogen	0.01	0.02	ND	ND	ND		
pH (pH units)	0.01	0.01	NA	6.95	7.04		
Sulfate	5	10	ND	75.9	74.0		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	656	408		
Aluminum	0.05	0.10	ND	ND	ND		
Calcium	0.25	0.50	ND	134	79.3		
Copper	0.01	0.02	ND	ND	ND		
Iron	0.02	0.05	ND	ND	0.089		
Magnesium	0.25	0.50	ND	32.7	20.3		
Manganese	0.005	0.010	ND	0.018	ND		
Potassium	0.5	1.0	ND	6.19	4.84		
Sodium	0.25	0.50	ND	40.1	30.4		
Zinc	0.015	0.030	ND	0.719	0.155		

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Page: 9
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 200.7, Boron by ICP

QUALITY CONTROL REPORT

QC Batch No: 061305-2 Sample Spiked: 33753.04 QC Prepared: 06/13/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	3.54	1.00	4.62	108	1.00	4.49	95	12.8	80-120	<20

QC Batch No: 061305-2 Sample Spiked: 33753.04 QC Prepared: 06/13/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Boron	1.00	1.03	103	80-120						

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Page: 10
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch No: 061305-2 Sample Spiked: 33753.04 QC Prepared: 06/13/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	ND	1.00	0.99	99	1.00	1.00	100	1.0	80-120	<15
Chromium	ND	1.00	0.98	98	1.00	0.99	99	1.0	80-120	<15
Lead	ND	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15
Nickel	ND	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15

QC Batch No: 061305-2 Sample Spiked: 33753.04 QC Prepared: 06/13/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	1.03	103	80-120						
Chromium	1.00	1.02	102	80-120						
Lead	1.00	1.01	101	80-120						
Nickel	1.00	1.01	101	80-120						

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Page: 11
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 060905 Sample Spiked: 33727.01 QC Prepared: 06/09/2005 QC Analyzed: 06/09/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	ND	50.00	51.00	102	50.00	50.50	101	<1	80-120	<15

QC Batch No: 060905 Sample Spiked: 33727.01 QC Prepared: 06/09/2005 QC Analyzed: 06/09/2005 Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	51.50	103	80-120		

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Page: 12
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 062305 Sample Spiked: 062305 QC Prepared: 06/23/2005 QC Analyzed: 06/23/2005 Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	25.25	101	25.00	25.00	100	<1	75-125	<20	
Chlorobenzene	25.00	24.75	99	25.00	25.00	100	1.0	75-125	<20	
Chloroform (Trichloromethane)	25.00	24.75	99	25.00	24.75	99	<1	75-125	<20	
1,1-Dichloroethene	25.00	24.75	99	25.00	25.25	101	2.0	75-125	<20	
Ethylbenzene	25.00	24.50	98	25.00	24.75	99	1.0	75-125	<20	
Toluene (Methyl benzene)	25.00	24.75	99	25.00	24.50	98	1.0	75-125	<20	
1,1,1-Trichloroethane	25.00	24.25	97	25.00	24.50	98	1.0	75-125	<20	
Trichloroethene	25.00	24.75	99	25.00	24.75	99	<1	75-125	<20	
o-Xylene	25.00	24.75	99	25.00	25.25	101	2.0	75-125	<20	
m,p-Xylenes	50.00	49.50	99	50.00	50.00	100	1.0	75-125	<20	

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Page: 13
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
33727	06/09/2005	URS

Method: GEN.-MINERALS, General Minerals

QUALITY CONTROL REPORT

QC Batch No: 060905 Sample Spiked: 060905 QC Prepared: 06/09/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	388	20.00	408.00	100	20.00	408.00	100	<1	80-120	<15
Total Alkalinity	388	20.00	408.00	100	20.00	408.00	100	<1	80-120	<15
Chloride (Cl), Total	ND	20.00	19.00 X	95	20.00	19.80 X	99	4.1	80-120	<15
Fluoride, Total	0.9	1.00	1.80 X	90	1.00	1.80 X	90	<1	80-120	<15
Hardness (Ca,Mg) as CaCO3	474	20.00	494.00	100	20.00	494.00	100	<1	80-120	<15
Nitrate as Nitrogen	ND	0.50	0.48 X	95	0.50	0.49 X	97	2.1	80-120	<15
Nitrite as Nitrogen	ND	0.20	0.20 X	101	0.20	0.20 X	101	<1	80-120	<15
Sulfate	ND	20.00	20.20 X	101	20.00	20.20 X	101	<1	80-120	<15
Surfactants (MBAS)	ND	0.20	0.19	95	0.20	0.19	96	1.0	80-120	<15
Aluminum	ND	1.00	1.06	106	1.00	1.05	105	<1	80-120	<15
Calcium	0.388	1.00	1.46	107	1.00	1.44	105	1.9	80-120	<15
Copper	ND	1.00	0.98	98	1.00	0.99	99	1.0	80-120	<15
Iron	ND	1.00	1.09	109	1.00	1.08	108	<1	80-120	<15
Magnesium	ND	1.00	1.07	107	1.00	1.05	105	1.9	80-120	<15
Manganese	ND	1.00	1.00	100	1.00	1.00	100	<1	80-120	<15
Potassium	ND	1.00	1.02	102	1.00	1.03	103	<1	80-120	<15
Sodium	0.491	1.00	1.47	98	1.00	1.49	100	2.0	80-120	<15
Zinc	ND	1.00	1.02	102	1.00	1.02	102	<1	80-120	<15

QC Batch No: 060905 Sample Spiked: 060905 QC Prepared: 06/09/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
pH (pH units)	7.00	7.00	100	80-120
Surfactants (MBAS)	0.20	0.19	95	80-120
Total Dissolved Solids	100.00	96.00	96	80-120
Aluminum	1.00	1.13	113	80-120

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ANALYTICAL RESULTS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submittd	Client
33727	06/09/2005	URS

Method: GEN.-MINERALS, General Minerals

QC Batch No: 060905 Sample Spiked: 060905 QC Prepared: 06/09/2005 QC Analyzed: 06/13/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Calcium	1.00	1.13	113	80-120						
Copper	1.00	1.01	101	80-120						
Iron	1.00	1.10	110	80-120						
Magnesium	1.00	1.09	109	80-120						
Manganese	1.00	1.03	103	80-120						
Potassium	1.00	1.06	106	80-120						
Sodium	1.00	1.11	111	80-120						
Zinc	1.00	1.04	104	80-120						

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Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate

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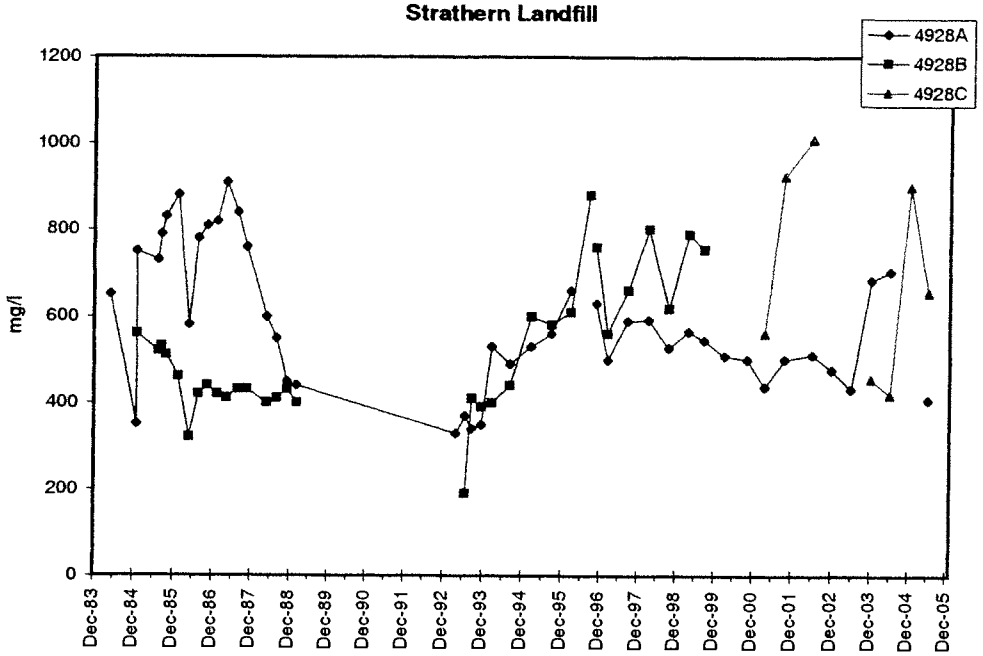
Data Qualifiers and Descriptors

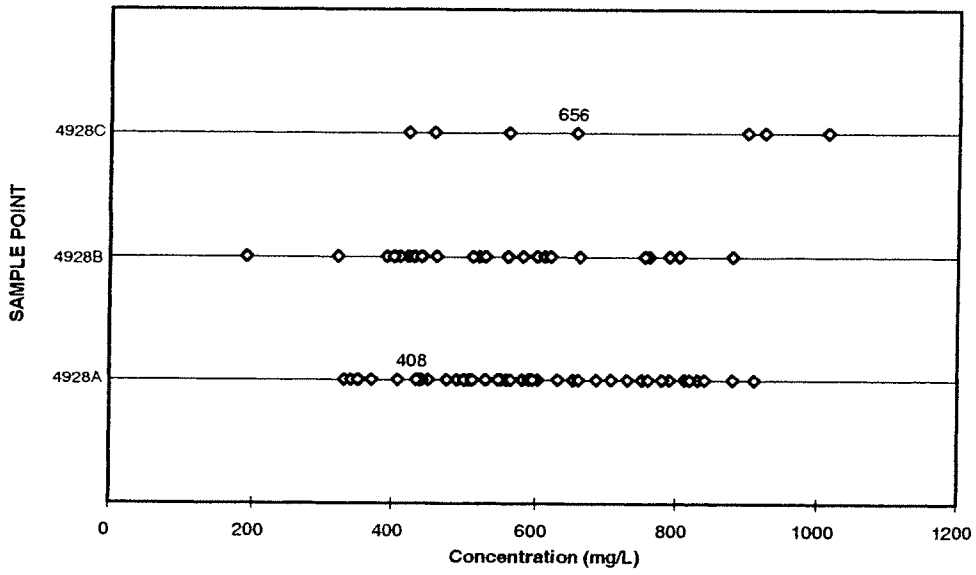
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

Total Dissolved Solids History
Strathern Landfill



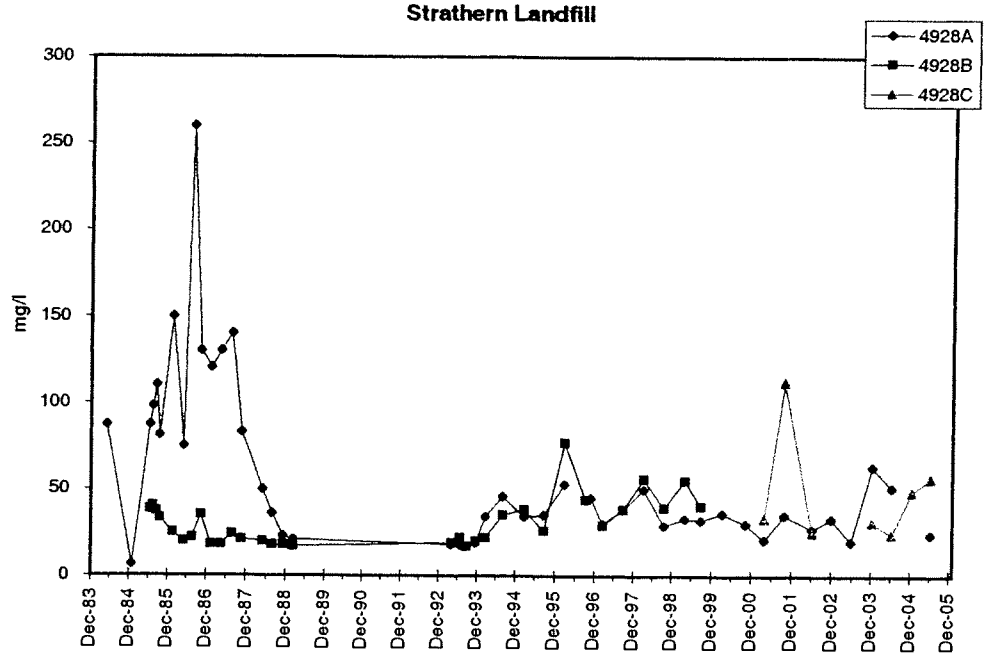
Total Dissolved Solids
Statistical Distribution



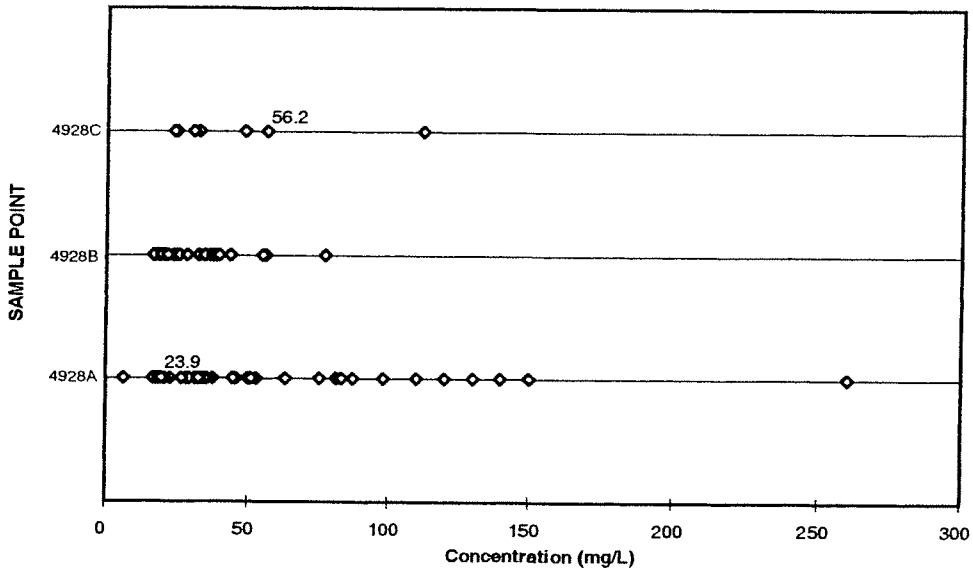
Data labels are for June 2005 sampling event.

URS

Chloride History
Strathern Landfill



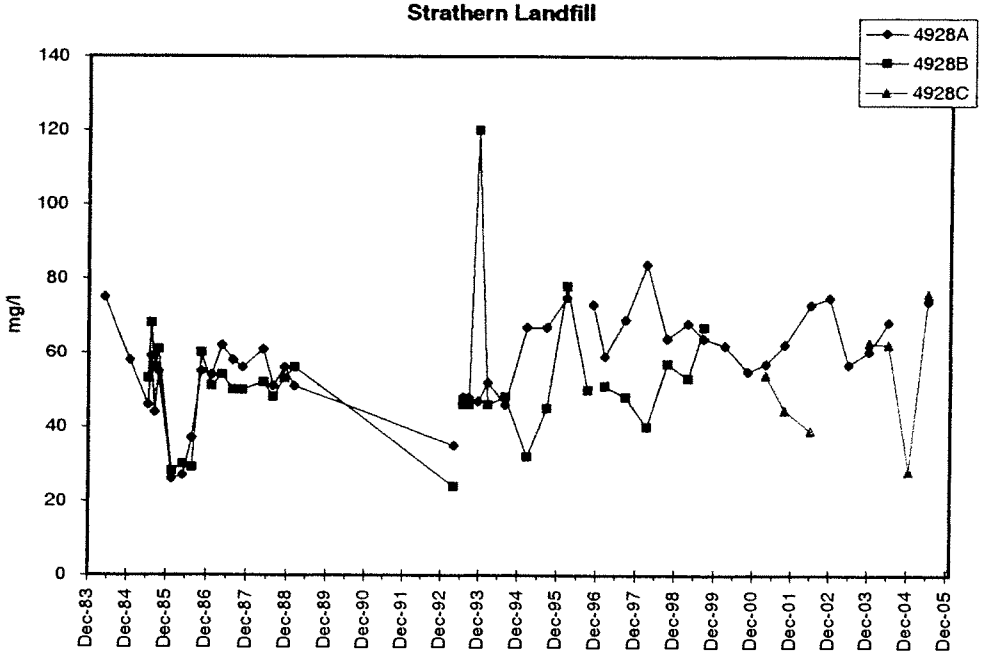
Chloride
Statistical Distribution



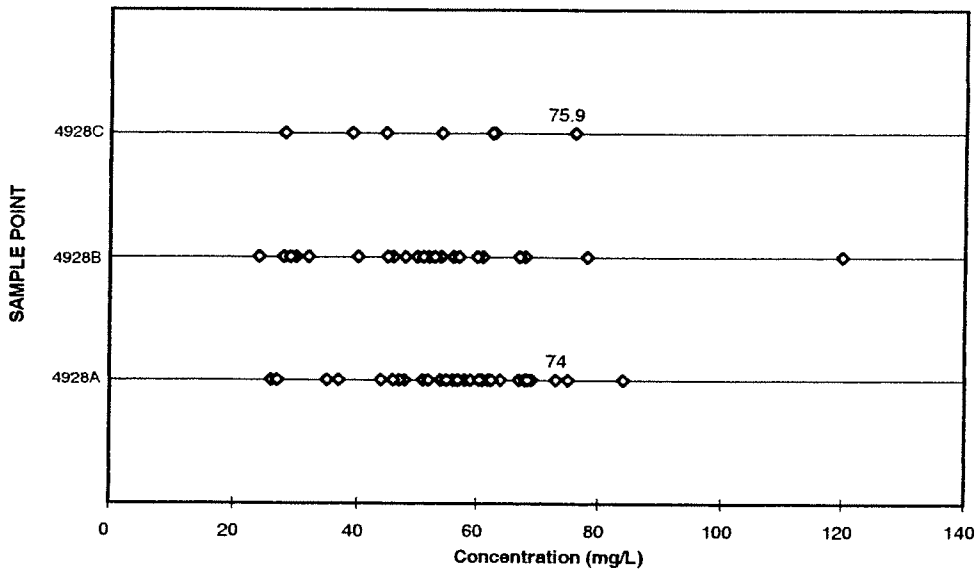
Data labels are for June 2005 sampling event.

URS

Sulfate History
Strathern Landfill



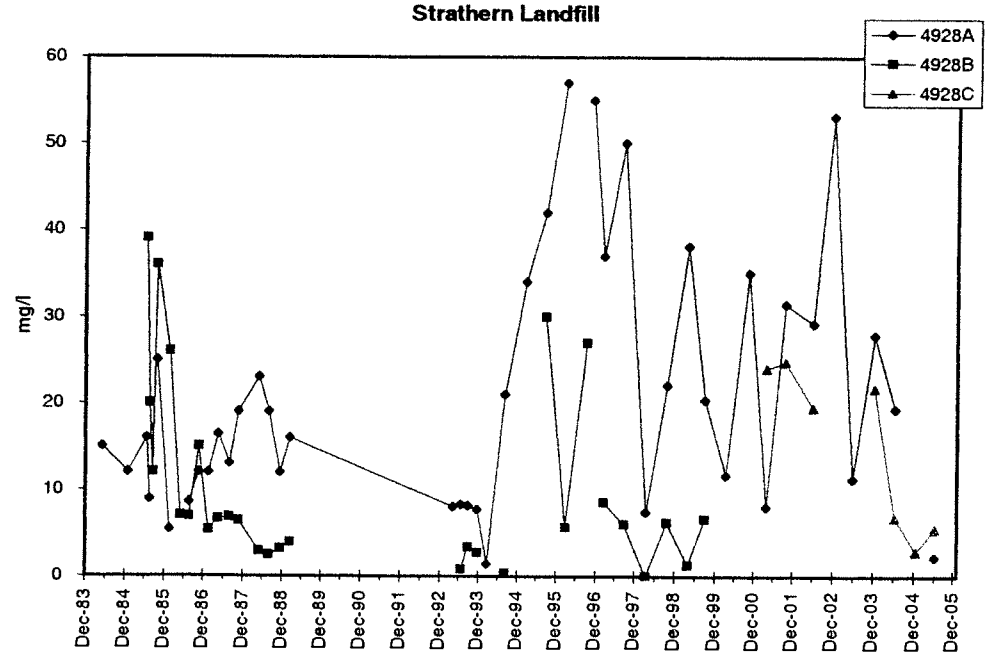
Sulfate
Statistical Distribution



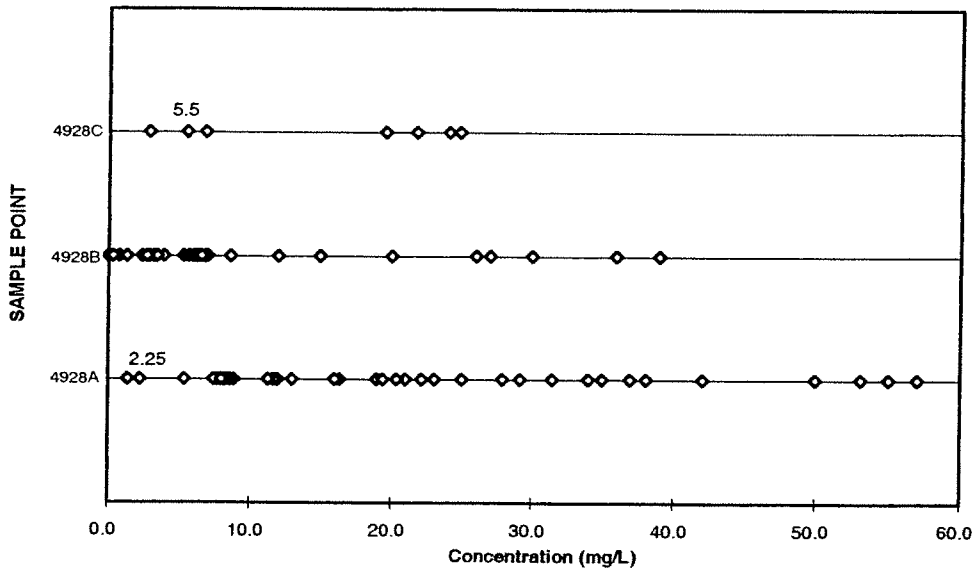
Data labels are for June 2005 sampling event.

URS

Nitrate History
Strathern Landfill



Nitrate
Statistical Distribution



Data labels are for June 2005 sampling event.

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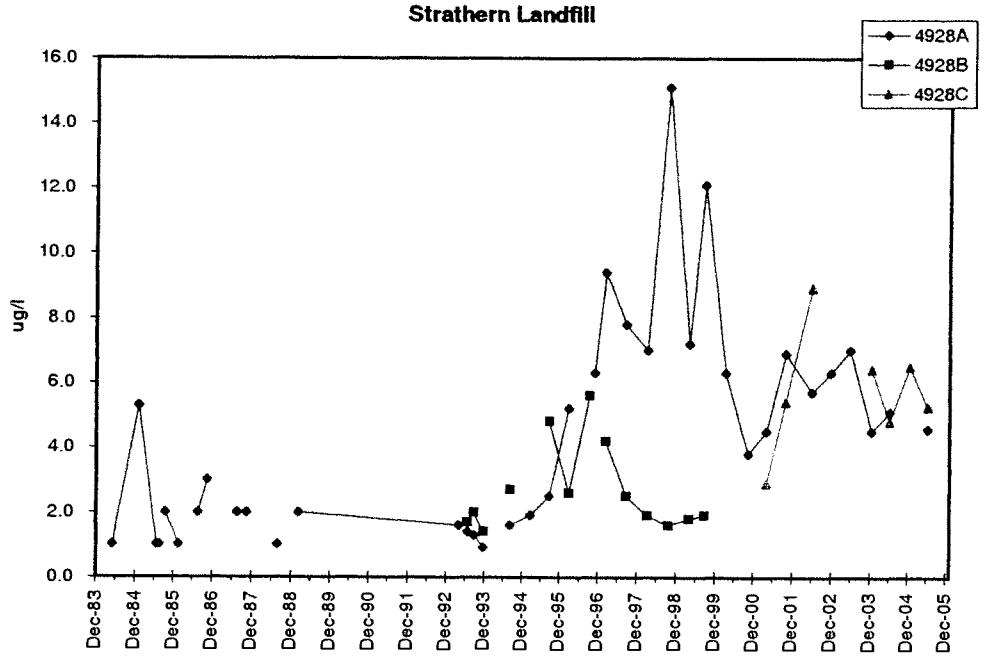
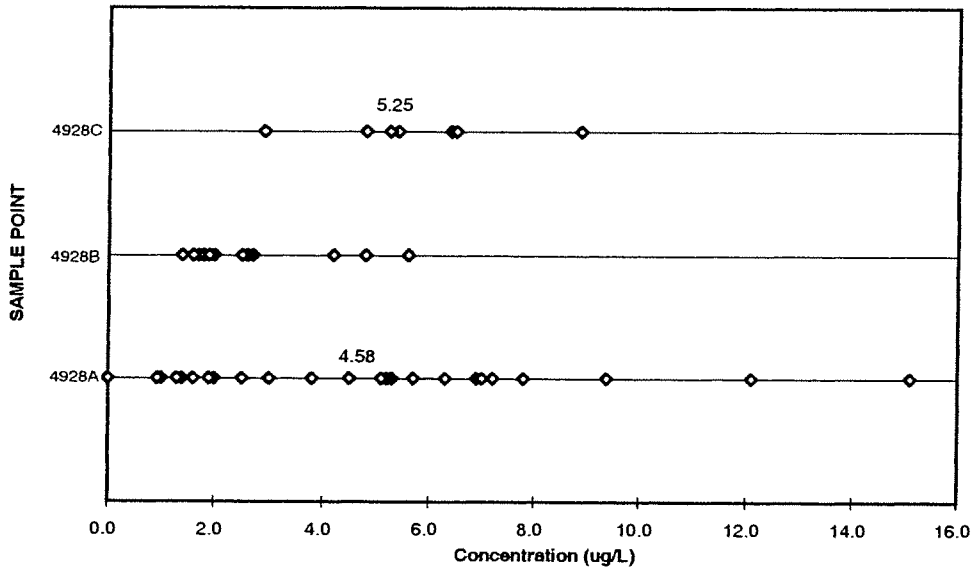
PCE History
Strathern Landfill

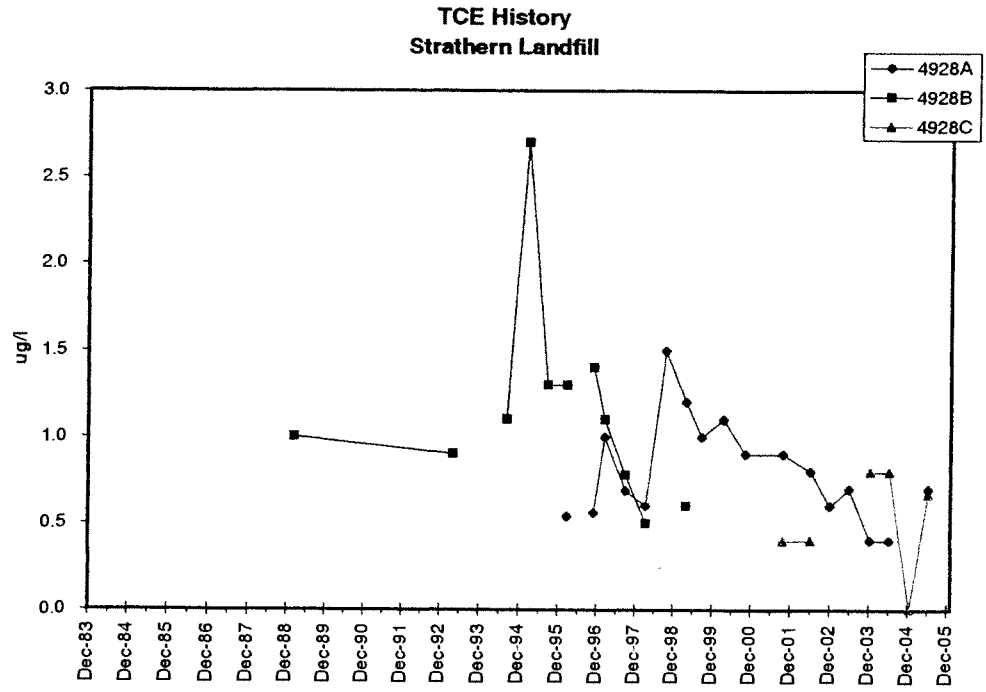


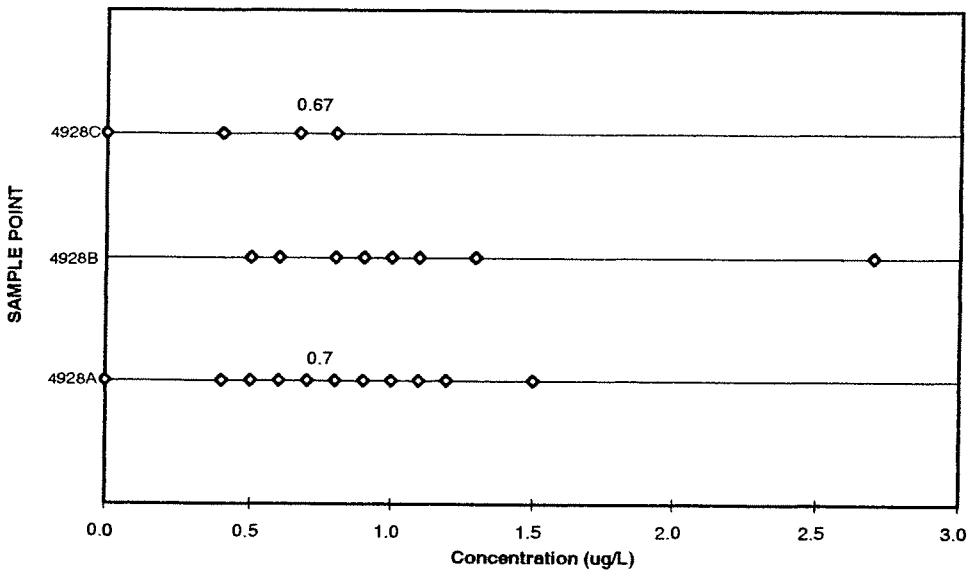
PCE
Statistical Distribution



Data labels are for June 2005 sampling event.

URS





Data labels are for June 2005 sampling event.

URS

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FIRST 2004 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB Order No. 91-086
File No. 58-137
CI No. 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY
Los Alamitos, California

Prepared by

MACTEC Engineering and Consulting, Inc.
Los Angeles, California

MACTEC Project 4951-03-3551

July 13, 2004

MACTEC

002919

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MACTEC

July 13, 2004

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **First 2004 Semi-Annual**
Groundwater Monitoring Report
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB File No. 58-137, Order No. 91-086, CI No. 7055
MACTEC Project 4951-03-3551

INTRODUCTORY SUMMARY

MACTEC Engineering and Consulting, Inc., (MACTEC) prepared this report for Los Angeles By-Products Company to satisfy requirements of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Waste Discharge Requirements (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) CI-7055 adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting of waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring and reporting was done during the first and third quarters by MACTEC, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, the Regional Water Quality Control Board (RWQCB) requested that reports be submitted on January 15 and July 15 as stated in the MRP. This report presents the results of first 2004 semi-annual groundwater monitoring activities at Strathern Landfill.

Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B has been dry since the first quarter of 2000. Therefore on March 23, 2001, we

MACTEC Engineering and Consulting
200 Citadel Drive • Los Angeles, CA 90040
323-889-5300 • Fax: 323-721-6700

requested and received permission from the RWQCB to monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Groundwater levels in the area have increased since December 2003. However, groundwater measurements during June 2004 show that monitoring well 4928B continues to be dry. Other monitoring wells in the area used for groundwater level measurements are also dry.

The analytical results of June 2004 monitoring show that groundwater quality is similar to historical results. During June 2004, inorganic groundwater quality met California Drinking Water Standards for the parameters measured except for Total Dissolved Solids (TDS) and electrical conductivity (EC)in well 4928A. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) in well 4928A. These results are similar to historical results. However, the site receives only solid inert waste from a small group of disposers, therefore waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

MACTEC measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) CI-7055. MACTEC personnel collected water samples and transported them to the laboratory in accordance with current U.S. Environmental Protection Agency (EPA) sample collection procedure guidelines. Samples were chilled while in transit to the laboratory.

All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services (DOHS) and in accordance with current EPA guideline procedures as specified in the monitoring program. American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MACTEC prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and

practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, and aggregates. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP CI-7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semi-annual sampling and reporting of groundwater quality and quarterly reporting of waste disposal. This report presents the results of the first 2004 semi-annual groundwater monitoring activities at Strathern Landfill.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

FIRST 2004 SEMI-ANNUAL MONITORING RESULTS

This section presents the first 2004 semi-annual monitoring results including groundwater levels and groundwater quality during June 2004.

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GROUNDWATER LEVELS

Between December 2003 and June 2004, groundwater levels increased about 5 feet in the monitoring wells. Well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. Groundwater levels remain near the site's historic low groundwater levels. This is probably related to the past few dry summer seasons and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 6,974 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2003 through May 2004. Figure 3 contains the hydrographs for the three on-site wells. The groundwater database in Appendix A contains the water level data.

GROUNDWATER FLOW VELOCITY AND DIRECTION

Monitoring wells in the area used for water level measurements were dry during June 2004, except for wells 4928A and 4928C. Therefore, we did not prepare a groundwater contour map or calculate flow velocity and direction for June 2004.

GROUNDWATER QUALITY

Groundwater samples for the second quarter were collected from wells 4928A and 4928C on June 8, 2004. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, and lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains the results of field and laboratory analyses for June 2004, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains the analytical results and chain-of-custody records from AETL for groundwater samples collected in June 2004.

Inorganics

Laboratory analyses indicated that during June 2004, the groundwater met California Drinking Water Standards for most constituents. At well 4928A, total dissolved solids (TDS) and electrical conductivity (EC) exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively. Table 2 shows June 2004 results compared to California Drinking Water Standards.

Organics

During June 2004, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) of 5.1 parts per billion (ppb) in well 4928A. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels increased between December 2003 and June 2004, however, they remain near the site's historic low water level. Due to an overall decrease in regional groundwater levels over the past years, upgradient well 4928B was dry during the second quarter monitoring event. Other monitoring wells in the area used for groundwater level measurements are also dry. This is may be related to the past few dry summer seasons and minimal groundwater recharge efforts by LADPW.

Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS), and electrical conductivity (EC) in well 4928A. Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE in well 4928A. There does not appear to be a correlation between landfill operations and groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for leachate from the landfill continues to be low. MACTEC will continue to monitor the groundwater at Strathern Landfill semi-annually.

002924

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We appreciate working with you on this project. If you have any questions regarding this report, please contact Kathy Foley at (323) 889-5340.

Sincerely,

MACTEC Engineering and Consulting

Katherine V. Foley
Project Geologist

William J. O'Braitis, C.E.G.
Principal Geologist

P:\70111 ENVIRONMENTAL\2003_PROJ\33551 (STRATHERN LANDFILL)\DELIVERABLES\2004\33551Q203.DOC KVF:cam
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

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CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Regional Board's requirements.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 13TH day of JULY, 2004, at Los Alamitos, California.

Ted Phillips
Vice President
Los Angeles By-Products Company

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Site Water Quality vs. California Drinking Water Standards - June 2004

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source	
			4928A (downgradient)	4928C (upgradient)
			June 2004	June 2004
Field Measurements				
pH (pH units)	pH units	6—9	7.31	7.47
Temperature	°F	—	68	67.1
Electrical Conductivity	µmhos/cm	900*	1,070	598
Carbon Dioxide	ppm	—	43	40
Alkalinity	ppm	—	380	280
Inorganic				
pH	pH units	6 – 9	6.99	7.14
Electrical Conductivity	µmhos/cm	900*	1,120	702
Alkalinity	mg/L	—	456	272
Total Dissolved Solids (TDS)	mg/L	500*	705	420
Sulfate (SO_4)	mg/L	250*	68.4	62.4
Nitrate (NO_3)	mg/L	45	19.4	6.82
Boron (B)	mg/L	1**	0.520	0.283
Chemical Oxygen Demand (COD)	mg/L	—	<5.0	7.78[J]
Bicarbonate (HCO3)	mg/L	—	456	272
Carbonate (CO3)	mg/L	—	<1	<1
Nickel (Ni)	µg/L	100	<10	<10
Iron (Fe)	mg/L	0.3	<0.02	0.043[J]
Cadmium (Cd)	µg/L	5	<5	<5
Chromium (Cr)	µg/L	50	15[J]	14[J]
Lead (Pb)	µg/L	15**	<15	<15
Organic				
Trichloroethylene (TCE)	µg/L	5	0.7	0.8
Tetrachloroethylene (PCE)	µg/L	5	5.1	4.8
Benzene	µg/L	1	<0.25	<0.25
Vinyl Chloride (VC)	µg/L	0.5	<0.25	<0.25

Prepared/Date: KVF/ 6-30-04
Checked/Date: ETA/ 7-2-04

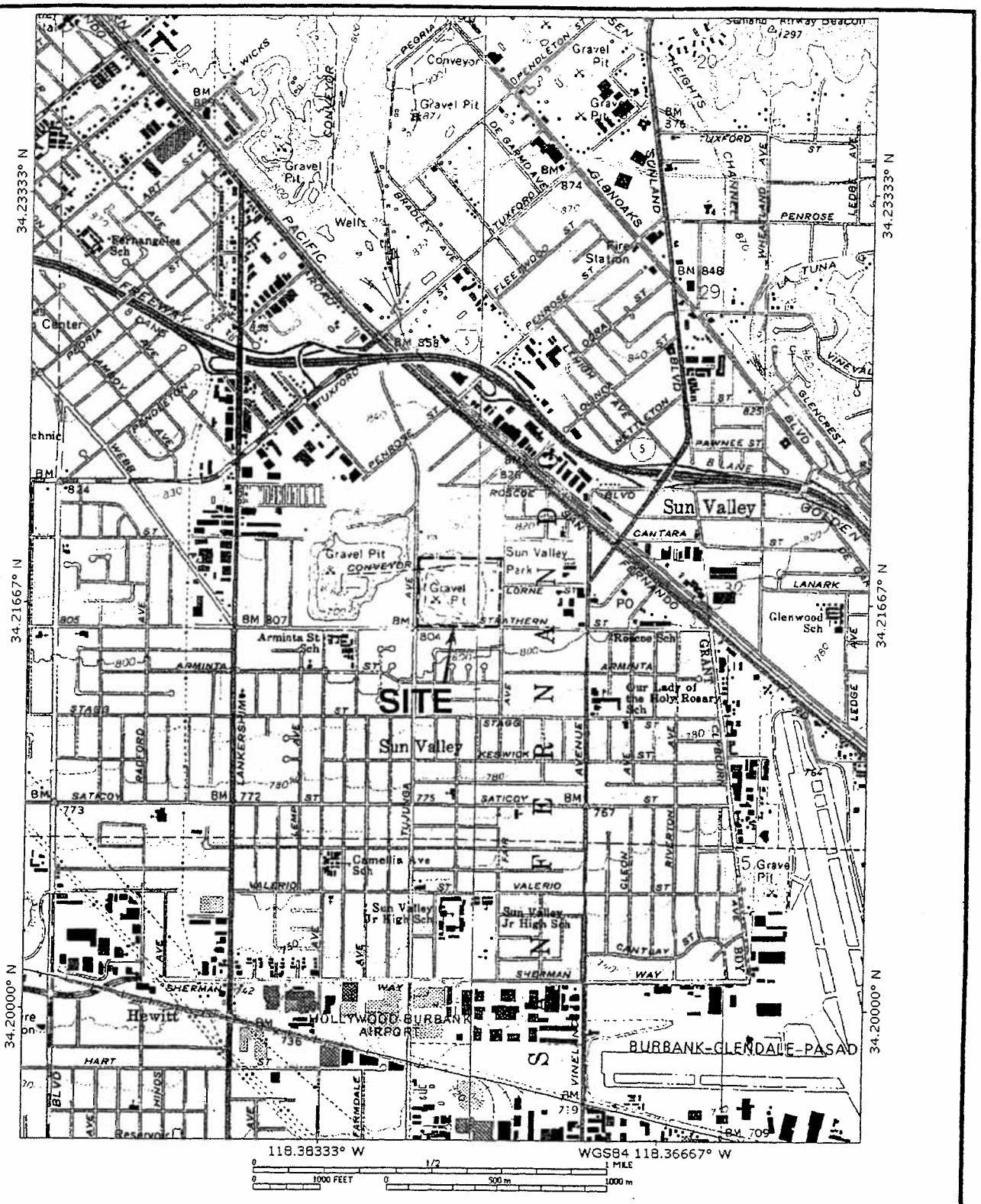
1 – Source: CCR, Title 22, Division 4, Chapter 15

** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), for which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS COMPANY
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

REFERENCE:
U.S.G.S. 7.5-MINUTE BURBANK AND VAN NUYS QUADRANGLES, 1966, PHOTOREVISED 1972.

MACTEC

FIGURE 1

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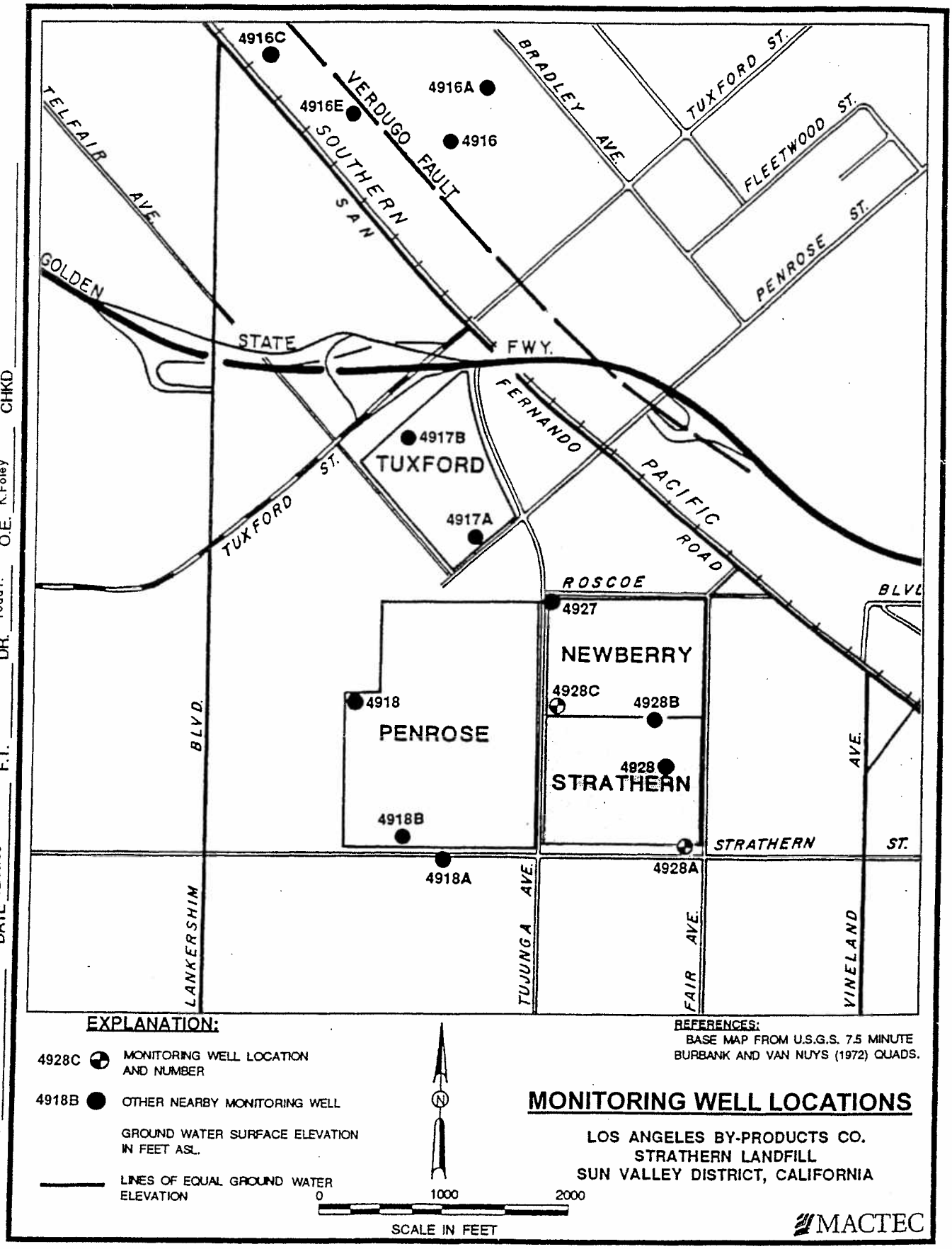
4916C
VERDUGO FAULT
SOUTHERN
SAN
4916E
4916A
4916
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
FERNANDO
PACIFIC
ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4918
PENROSE
4928
STRATHERN
AVE.
BLVD.
4918B
4918A
4928A
STRATHERN ST.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 4951-03-3551
DATE 12/08/03
F.T.
DR. ToddT.
O.E. K.Foley
CHKD
EXPLANATION:
4928C MONITORING WELL LOCATION AND NUMBER
4918B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL.
LINES OF EQUAL GROUND WATER ELEVATION
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC

FIGURE 2

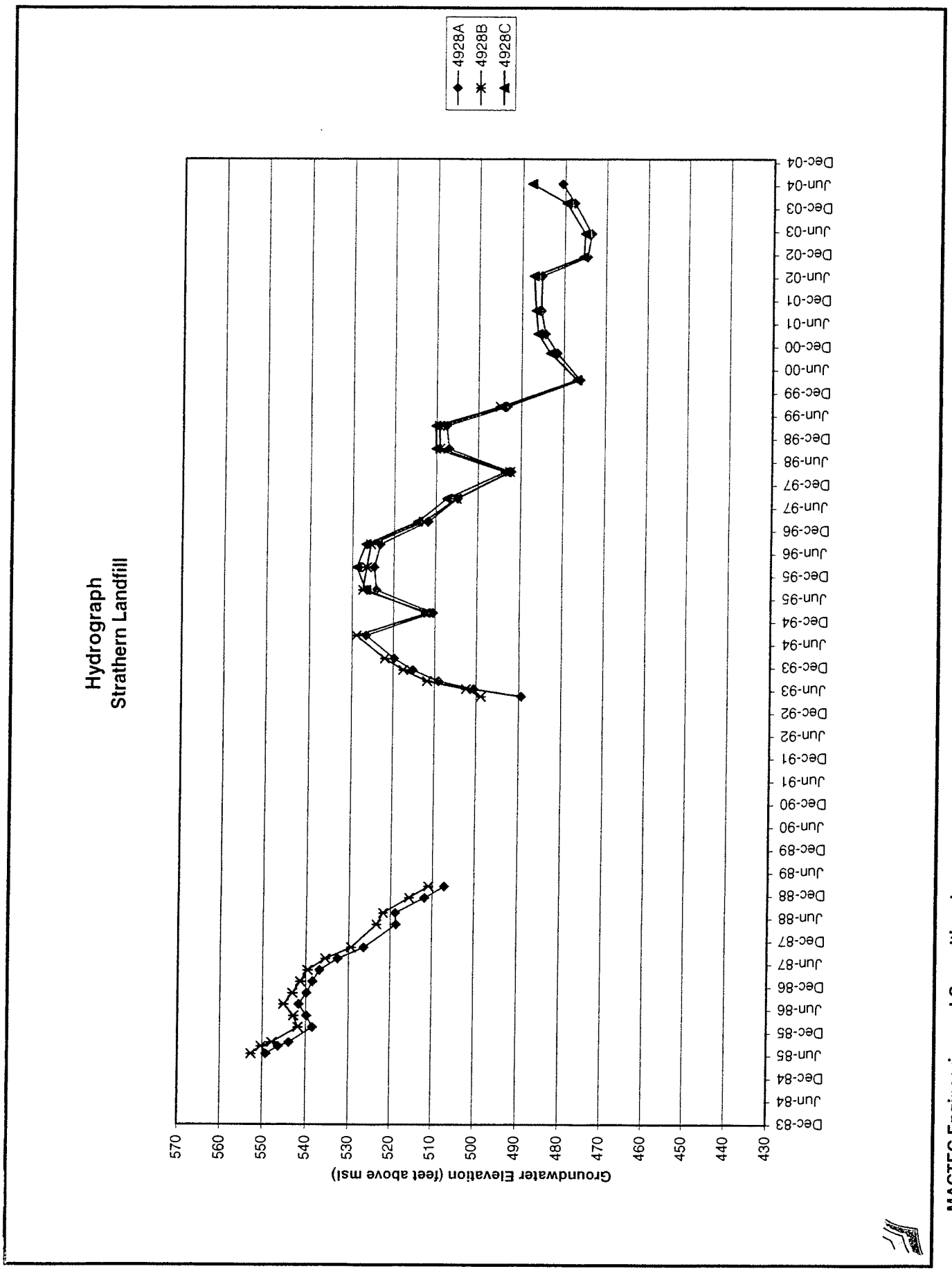

Figure 3

MACTEC Engineering and Consulting, Inc.

APPENDIX A

GROUNDWATER DATABASE

JOB 4951-03-3551 DATE 9/8/04 F.T. _____ DR. _____ O.E. KVF CHKD CTA

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 4951-03-3551 01

POINT	DATE	WATER LEVEL	FIELD MEASUREMENTS					GENERAL MINERALS							
		REF PT W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs		6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	603.78							7.20	120	28	48	6 0	0 0	363
4928A	31-Dec-84							560	7.70	73	16	26	4.2	0 0	280
4928A	19-Jun-85	549 22	7 1	69	1100	89 0	506	1300	7.00	130	36	90	9.0	0 0	490
4928A	17-Jul-85	547 95	6 8	68	1180	102 0	480	1300	6 90	120	34	93	8 6	0 0	620
4928A	14-Aug-85	546.41	6 8	74	1250	22 5		1400	7.60	230	33	79	11 0	0 0	610
4928A	19-Sep-85	543 93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6 0	0 0	670
4928A	16-Jan-86	538 51	7 0	66	1400		180	1400	7 00	160	40	91	8 6	0 0	620
4928A	29-Apr-86	539.84	6 6	68	900	68 0	350	1100	7.80	170	27	63	7 6	0 0	488
4928A	22-Jul-86	541 67	7 3	69	1200	66.0	460	1300	7 10	170	36	80	8 0	0 0	390
4928A	15-Oct-86	539.90	5 9	67	1200	26.0	470	1400	7 40	160	41	84	3 8	0 0	490
4928A	14-Jan-87	538 50	6.9	66	340	75 0	460	1400	7.00	160	38	82	7 6	0 0	590
4928A	15-Apr-87	536 86	5 8	69	1100	42 5	490	1500	6 80	170	44	85	6 6	<0 6	650
4928A	24-Jul-87	803.1 532 61	7 2	70	1200	35 0	515	1400	7.00	170	47	110	8 4	<0 6	630
4928A	21-Oct-87	526 40	6 9	66	760	34 5	436	1300	7.70	140	34	82	8 5	<0 6	590
4928A	29-Apr-88	518.58	8.0	66	950	32.0	203	1000	7 30	110	63	63	6 4	<0 6	480
4928A	28-Jul-88	518.82	7.4	67	450	37 0	385	900	7.40	99	24	51	5 6	<0 6	442
4928A	08-Nov-88	511.81	7.2	65	700	32 0	350	760	7 20	91	26	49	5 6	<0 6	370
4928A	07-Feb-89	803.78 507 20	7 0	66	700	35 0	360	720	7 20	92	21	35	4 5	<0.6	350
4928A	02-Apr-93	489.42	7 9	67	350	37	264	590	7 60	72	17	29	4 6	<0 6	320
4928A	22-Jun-93	500 59	7 8	66	440	25	252	610	7 50	72	18	29	4 5	<0 6	290
4928A	24-Aug-93	509 08	NA	67	550	25	244	610	7.10	73	18	30	4 6	<0 6	290
4928A	19-Nov-93	515 15	7.40	66	500	22	248	600	7 40	69	17	29	4 5	<0 6	290
4928A	21-Feb-94	519 78	7 20	66	650	50	348	830	7.10	100	24	45	5 9	<0 6	430
4928A	05-Aug-94	526 64	7 00	66	700	55	356	820	7 00	91	23	39	5 4	<1	330
4928A	20-Feb-95	510 49						830	6 90	97	25	36	5 3	<0 6	390
4928A	24-Aug-95	524 22	7 00	68	650	100	386	900	6 90	100	25	43	5 4	<10	330
4928A	23-Feb-96	524 74	7.00	65	1015	75	400	1100	6 80	120	53	48	5 9	<10	380
4928A	23-Aug-96	523 41													
4928A	11-Sep-96	NM													
4928A	31-Oct-96	516 47	7 40	65 4	995	130	348	960	7 10	120	30	47	6 4	<10	360
4928A	14-Feb-97	511 81	7 20	65 2	830	50	420	850	6 90	100	27	37	5 6	0	390
4928A	26-Aug-97	504 90	7 00	66 9	825	34	372	890	6 60	110	27	41	5 5	0	400
4928A	12-Mar-98	492 23	7 30	68 3	881	36	320	890	7 25	101	26 5	34 3	6 4	<2 0	320
4928A	21-Sep-98	507 01	7.17	65 9	785	25		816	7 04	96 6	24 6	31 2	5 0	<2	358
4928A	30-Mar-99	507 59	7 60	70 2	829		378	870	7 34	96 3	25 2	32 8	4 9	<2 0	324
4928A	25-Aug-99	493 23	7 46	66 9	902	37	372	854	7 00	100	27	35 7	4 5	<2 0	332
4928A	10-Mar-00	476 16	7 25	64 0	528	35	340	800	7 13	102	25 6	30 1	7 0	<1	296
4928A	09-Oct-00	481 63	6 76	67 1	800	30	372	790	6 81	93 9	24 2	32 6	5 5	<1	286
4928A	29-Mar-01	484 40	7.44	65.1	733	28	376	733	7.34	87 1	22 1	32 1	5 3	<1	290
4928A	25-Sep-01	485.40	8.10	68 2	511	32	156	817	7 31	89 6	23.2	31 2	5 3	<1	288
4928A	05-Jun-02	485 26	7 65	65 5	766	26	363	761	7.20	88 6	24 1	34 5	15 8	<1	282
4928A	27-Nov-02	474 58	6.90	65 3	722	32	336	824	7 13	99 4	26 1	35 3	5 5	<1	280
4928A	30-May-03	473 67	7 31	67 1	664	33	348	720	7 26	81 4	21 1	29 5	4 59	<1	284
4928A	10-Dec-03	449 97	7.40	66.8	1300	35	530	1120	7 06	147	35 7	38.7	5 37	<1	464
4928A	08-Jan-04	477 78													
4928A	08-Jun-04	450.35	7.31	68 0	1070	43	380	1120	6 99	135	33 0	37 6	5 74	<1	456
4928A	24-Jun-04	480.68													

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JOB 4951-03-3551 DATE 7-8-04 F.T. _____ DR. _____ O.E. KVF CHKD ETA

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356
4928B	28-Jul-68	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													
4928B	25-Sep-01		DRY													
4928B	05-Jun-02		DRY													
4928B	27-Nov-02		DRY													

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JOB 4951-03-3551 DATE 1-8-04 F.T. _____ DR. _____ O.E. KVF CHKD EJA

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	30-May-03		DRY													
4928B	10-Dec-03		DRY													
4928B	08-Jun-04		DRY													
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.16													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		476.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670
4928C	27-Nov-02		475.52													
4928C	30-May-03		475.27													
4928C	10-Dec-03		487.65	7.45	67.5	680	30	340	756	7.24	88.6	22.3	31.4	4.47	<1	290
4928C	08-Jan-04		479.70													
4928C	08-Jun-04		487.78	7.47	67.1	598	40	280	702	7.14	79.3	20.2	28.8	4.74	<1	272
4928C	24-Jun-04		482.27													

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	15.0			650			1			1.0		0.70	#REF!	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		600	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<6	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	46	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	67	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	26-Aug-97	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<6	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	75	33	53.1	0.4	348	476	5.4'	0.6	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014'	0.215	<50	<10	AETL
4928A	10-Dec-03	60.4	63	27.9	0.512	575	685	13.7	0.4'	4.5	<0.25	<0.25	<5	12'	<0.02	<15	<10	AETL
4928A	08-Jan-04																	
4928A	08-Jun-04	68.4	51.0	19.4	0.520	528	705	<5	0.7	5.1	<0.25	<0.25	<5	15'	<0.02	<15	<10	AETL
4928A	24-Jun-04																	

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JOB 4951-03-3551 DATE 1-8-04 F.T. _____ DR. _____ O.E. KVF CHKD ETA

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
		SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs	250	250	45	0 5	--	500	--	5	5	1	0 5	5	50	0 3	50	100	
4928B	23-Oct-84	60	40	19 0			620			4					<0 08			B&C
4928B	19-Jun-85	53	38	39 0			560	<0 05	<1	<1					<0 09			B&C
4928B	17-Jul-85	68	40	20 0			520	0 06	<1	<1					<0 06			B&C
4928B	14-Aug-85	56	37	12 0	0.4		530	<0 05							<0 046			B&C
4928B	19-Sep-85	61	33	36 0			510	<0 05	<1	3					<0 042			B&C
4928B	16-Jan-86	28	25	26 0			460	<0 05	<1	<1					<0 063			B&C
4928B	29-Apr-86	30	20	7 0			320		<1	1					<0 2			B&C
4928B	22-Jul-86	29	22	6 9			420	0 12	<1	3					<0 2			B&C
4928B	15-Oct-86	60	35	15 0	0 3		440	<0 05	<1	<1			<10		0 29	<20		B&C
4928B	14-Jan-87	51	18	5 3	0 5		420	0 10	<1	2			<10		<0 03	<20	<0 06	B&C
4928B	15-Apr-87	54	18	6 6	0.4		410	0.08	<1	2			<10		0 88	<10	<0 04	B&C
4928B	24-Jul-87	50	24	6.8			430	<0.05	<1	4			<20		<0 02	<20	<0 04	B&C
4928B	21-Oct-87	50	21	6 4	0 25		430	<0 05	<1	<1			<20		0 20	<10	<0 04	B&C
4928B	29-Apr-88	52	20	2 9	0 18		400	7 0	<1	3			<20		5 70	13	<0 004	B&C
4928B	28-Jul-88	48	18	2 4	0 19		410	6 0	<1	4			<1		<0 02	<2	<0 04	B&C
4928B	08-Nov-88	53	18	3 2	0 16		430	<3	<1	4			<1		0 04	<2	<0 04	B&C
4928B	07-Feb-89	56	17	3 9	<0 02		400	<5	1	5			<1		2 20	3	<0 04	B&C
4928B	02-Apr-93	24	19	<0 2			190	<6	0 90	<0 5			5		0 82	49	<0 04	B&C
4928B	22-Jun-93	46	22	0 78			410	7 2	<1	1 7			1		14	24	<0 04	B&C
4928B	24-Aug-93	46	17	3 4			390	<6	<1	2 0			<1		17	18	<0 04	B&C
4928B	19-Nov-93	120	20	2 7			400	<6	<0 5	1 4			<1		82	3	<0 04	B&C
4928B	21-Feb-94	46	22	<0 2	0 25		440		<0 5	<0 5			<1		87	13	<0 04	B&C
4928B	05-Aug-94	48	35	0 31	0 27		600		1 1	2 7			<3		7 9	17	<0 005	B&C
4928B	20-Feb-95	32	38	<0 1	<0 05		580	6 9	2 7	<0 5			<5	<10	2 4	16	<0 04	B&C
4928B	24-Aug-95	45	26	30	<0 2		610	<6	1 3	4 8			<5	<10	18	14	<0 04	B&C
4928B	23-Feb-96	78	77	5 7	0 53		880	32 0	1 3	2 6			<1	<10	24	7 6	<0 04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0 31		760		1 4	5 6			<10	<10	<0 4	<50	<0 04	BCA
4928B	14-Feb-97	51	29	8 6	<0 2		560	15	1 1	4 2			<5	<10	0 063	<50	<0 04	VOC
4928B	26-Aug-97	48	38	6	0 21		660	34	0 78	2 5			<5	<10	0.27	<50	<0 04	VOC
4928B	12-Mar-98	40	56	<0 1	0 5		802	<10	0 5	1 9			<5	<10	51 5	140	<0 04	AETL
4928B	21-Sep-98	57	39	6 2	0 3		618	<6	<0 5	1 6			<5	<10	44 5	<50	<0 04	AETL
4928B	30-Mar-99	53	55	1 3	0 3		789	<6 0	0 6	1 8			<5	<10	34 4	<50	<0 04	AETL
4928B	25-Aug-99	67	40	6 6	0 3		754	<6 0	<0 5	1 9			<5	<10	0 33	<50	<0 04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	
4928B	25-Sep-01																	
4928B	05-Jun-02																	
4928B	27-Nov-02																	

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JOB 4951-03-3551 DATE 7-8-04 F.T. _____ DR. _____ O.E. KVP CHKD GTA

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551 01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	30-May-03																	
4928B	10-Dec-03																	
4928B	08-Jun-04																	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02																	
4928C	30-May-03																	
4928C	10-Dec-03	62.8	31	21.7	0.285	332	456	12.4	0.8	6.4	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	08-Jan-04																	
4928C	08-Jun-04	62.4	24.0	6.82	0.283	302	420	7.78J	0.8	4.8	<0.25	<0.25	<5	14J	0.043J	<15	<10	AETL
4928C	24-Jun-04																	

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

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FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Kathy Foley

Number of Pages 12
Date Received 06/08/2004
Date Reported 06/24/2004

Job Number	Order Date	Client
29365	06/08/2004	LC

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill
Site: Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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Po# MEC06030161

CHAIN OF CUSTODY RECORD

№ 32407

AETL JOB No. 29365

Page 1 of 1

COMPANY: MACTEC
PHONE: 323-889-5300
PROJECT MANAGER: Kathy Foley
FAX: 323-721-6700
PROJECT NAME: Strathern Landfill
PROJECT #: 4951-03-3551.01
SITE NAME AND ADDRESS: Sun Valley, CA

ANALYSIS REQUESTED

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	Gen. Min.	Boron	COD	Cd, Cr, Ni, Pb	524.2 (see list)					TEST INSTRUCTIONS & COMMENTS
4928A	29365.01	6/8/04	1220	W	Various		X				X					VOC's
4928C	29365.02	6/8/04	1300	W	Various		X				X					Benzene
																PCE
																TCE
																Vinyl Chloride
																See attached list for General Minerals
																Also - see attached Sheet for metals detection limits
																Dissolved metals - filter samples.

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	8	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / (N) / NA		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: MIKE EAGON	Printed Name:	Printed Name:
Date: 6/8/04 Time: 1335	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: [signature]
Printed Name:	Printed Name:	Printed Name: Jewel
Date: Time:	Date: Time:	Date: 6/8/04 Time: 1335

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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Site

Sun Valley, CA

Page: 2

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Clien
29365	06/08/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062104

Our Lab I.D.			Method Blank	29365.01	29365.02
Client Sample I.D.				4928A	4928C
Date Sampled				06/08/2004	06/08/2004
Date Prepared			06/21/2004	06/08/2004	06/08/2004
Preparation Method			5035A	5035A	5035A
Date Analyzed			06/21/2004	06/21/2004	06/21/2004
Matrix			Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L
Dilution Factor			1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**
Acetone	0.5	1.0	ND	ND	ND
Benzene	0.25	0.50	ND	ND	ND
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND
Bromochloromethane	0.25	0.50	ND	ND	ND
Bromodichloromethane	0.25	0.50	ND	ND	ND
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND
2-Butanone (MEK)	0.5	1.0	ND	ND	ND
n-Butylbenzene	0.25	0.50	ND	ND	ND
sec-Butylbenzene	0.25	0.50	ND	ND	ND
tert-Butylbenzene	0.25	0.50	ND	ND	ND
Carbon Disulfide	0.25	0.50	ND	ND	ND
Carbon tetrachloride	0.25	0.50	ND	ND	ND
Chlorobenzene	0.25	0.50	ND	ND	ND
Chloroethane	0.25	0.50	ND	ND	ND
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND	ND
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND
2-Chlorotoluene	0.25	0.50	ND	ND	ND
4-Chlorotoluene	0.25	0.50	ND	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)	0.25	0.50	ND	ND	ND
Dibromochloromethane	0.25	0.50	ND	ND	ND
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND
Dibromomethane	0.25	0.50	ND	ND	ND
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND
Dichlorodifluoromethane	0.25	0.50	ND	3.7	2.0

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ANALYTICAL RESULTS

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062104

Our Lab I.D.			Method Blank	**29365.01**	**29365.02**
Client Sample I.D.				4928A	4928C
Date Sampled				06/08/2004	06/08/2004
Date Prepared			06/21/2004	06/08/2004	06/08/2004
Preparation Method			5035A	5035A	5035A
Date Analyzed			06/21/2004	06/21/2004	06/21/2004
Matrix			Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L
Dilution Factor			1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**
1,1-Dichloroethane	0.25	0.50	ND	2.0	2.1
1,2-Dichloroethane (EDC)	0.25	0.50	ND	1.7	ND
1,1-Dichloroethene	0.25	0.50	ND	ND	ND
cis-1,2-Dichloroethene	0.25	0.50	ND	0.3J	0.4J
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND
1,2-Dichloropropane	0.25	0.50	ND	ND	ND
1,3-Dichloropropane	0.25	0.50	ND	ND	ND
2,2-Dichloropropane	0.25	0.50	ND	ND	ND
1,1-Dichloropropene	0.25	0.50	ND	ND	ND
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND
Ethylbenzene	0.25	0.50	ND	ND	ND
Hexachlorobutadiene	0.25	0.50	ND	ND	ND
2-Hexanone	0.5	1.0	ND	ND	ND
Isopropylbenzene	0.25	0.50	ND	ND	ND
p-Isopropyltoluene	0.25	0.50	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	ND
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND
Naphthalene	0.25	0.50	ND	ND	ND
n-Propylbenzene	0.25	0.50	ND	ND	ND
Styrene	0.25	0.50	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND	ND
Tetrachloroethene	0.25	0.50	ND	5.1	4.8
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND	ND
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND	ND
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND
Trichloroethene	0.25	0.50	ND	0.7	0.8
Trichlorofluoromethane	0.5	1.0	ND	ND	ND
1,2,3-Trichloropropane	0.25	0.50	ND	ND	ND
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Clier
29365	06/08/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 062104

Our Lab I.D.			Method Blank	**29365.01**	**29365.02**
Client Sample I.D.				4928A	4928C
Date Sampled				06/08/2004	06/08/2004
Date Prepared			06/21/2004	06/08/2004	06/08/2004
Preparation Method			5035A	5035A	5035A
Date Analyzed			06/21/2004	06/21/2004	06/21/2004
Matrix			Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L
Dilution Factor			1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND
Vinyl Acetate	0.25	0.50	ND	ND	ND
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND
o-Xylene	0.25	0.50	ND	ND	ND
m,p-Xylenes	0.5	1.0	ND	ND	ND
Total trihalomethane compounds	0.25	0.50	ND	ND	ND
Our Lab I.D.				**29365.01**	**29365.02**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**
Bromofluorobenzene	75-125		96	99	98
1,2-Dichlorobenzene	75-125		79	80	77

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Clien
29365	06/08/2004	LC

Method: GEN.-MINERALS, General Minerals

QC Batch No: 060804

Our Lab I.D.			Method Blank	29365.01	29365.02
Client Sample I.D.				4928A	4928C
Date Sampled				06/08/2004	06/08/2004
Date Prepared			06/08/2004	06/08/2004	06/08/2004
Preparation Method			Various	Various	Various
Date Analyzed			06/11/2004	06/11/2004	06/11/2004
Matrix			Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L
Dilution Factor			1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**
Bicarbonate (as CaCO3)	1	2	ND	456	272
Carbonate (as CaCO3)	1	2	ND	ND	ND
Hydroxide (as CaCO3)	1	2	ND	ND	ND
Total Alkalinity	1	2	ND	456	272
Anions Total (meq/L)	0.01	0.01	NA	12.3	7.55
Cations Total (meq/L)	0.01	0.01	NA	11.3	7.02
Ion Balance (percent difference)	0.01	0.01	NA	4.24	3.64
Nitrate	0.05	0.10	ND	19.4	6.82
Nitrite	0.01	0.02	ND	ND	ND
Chloride (Cl), Total	0.5	1.0	ND	51.0	24.0
Conductivity (umhos/cm @77F)	5	10	ND	1,120	702
Fluoride, Total	0.1	0.2	ND	0.320	0.470
Hardness (Ca,Mg) as CaCO3	1	2	ND	528	302
pH (pH units)	0.01	0.01	NA	6.99	7.14
Sulfate	5	10	ND	68.4	62.4
Surfactants (MBAS)	0.03	0.05	ND	ND	ND
Total Dissolved Solids	5	10	ND	705	420
Aluminum	0.05	0.10	ND	ND	ND
Calcium	0.25	0.50	ND	135	79.3
Copper	0.01	0.02	ND	ND	ND
Iron	0.02	0.05	ND	ND	0.043J
Magnesium	0.25	0.50	ND	33.0	20.2
Manganese	0.005	0.010	ND	ND	ND
Potassium	0.5	1.0	ND	5.74	4.74
Sodium	0.25	0.50	ND	37.6	28.8
Zinc	0.015	0.030	ND	0.855	0.173

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Our Lab I.D.							N/A	29365.01	29365.02
Client Sample I.D.							Method Blank	4928A	4928C
Date Sampled							06/08/2004	06/08/2004	06/08/200
Matrix							Aqueous	Aqueous	Aqueous
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	**Results**
Cadmium	1	200.7	mg/L	0.005	0.050	06/10/2004	ND	ND	ND
Chromium	1	200.7	mg/L	0.01	0.05	06/10/2004	ND	0.015J	0.014J
Lead	1	200.7	mg/L	0.015	0.100	06/10/2004	ND	ND	ND
Nickel	1	200.7	mg/L	0.01	0.05	06/10/2004	ND	ND	ND
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/10/2004	ND	ND	7.78J
Boron	1	SM-4500B	mg/L	0.1	0.2	06/14/2004	ND	0.520	0.283

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Page: 7

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch No: 061004 Sample Spiked: 29376.15 QC Prepared: 06/10/2004 QC Analyzed: 06/10/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	ND	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15
Chromium	ND	1.00	1.05	105	1.00	1.05	105	<1	80-120	<15
Lead	ND	1.00	1.05	105	1.00	1.03	103	1.9	80-120	<15
Nickel	ND	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15

QC Batch No: 061004 Sample Spiked: 29376.15 QC Prepared: 06/10/2004 QC Analyzed: 06/10/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	1.01	101	80-120
Chromium	1.00	1.02	102	80-120
Lead	1.00	1.05	105	80-120
Nickel	1.00	1.03	103	80-120

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Page: 8

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Clien
29365	06/08/2004	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 061004 Sample Spiked: 29372.01 QC Prepared: 06/10/2004 QC Analyzed: 06/10/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	64.0	50.00	114.00	100	50.00	110.58	97	3.0	80-120	<15

QC Batch No: 061004 Sample Spiked: 29372.01 QC Prepared: 06/10/2004 QC Analyzed: 06/10/2004

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Chemical Oxygen Demand	89.0	86.2	3.2	<15	50.00	52.00	104	80-120

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 062104 Sample Spiked: 062104 QC Prepared: 06/21/2004 QC Analyzed: 06/21/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	25.00	25.25	101	25.00	25.25	101	<1	75-125	<20
Chlorobenzene	25.00	24.50	98	25.00	25.25	101	3.0	75-125	<20
Chloroform (Trichloromethane)	25.00	25.75	103	25.00	22.50	90	13.5	75-125	<20
1,1-Dichloroethene	25.00	26.75	107	25.00	28.50	114	6.3	75-125	<20
Ethylbenzene	25.00	24.25	97	25.00	23.50	94	3.1	75-125	<20
Methyl-tert-butyl ether (MTBE)	25.00	25.50	102	25.00	23.00	92	10.3	75-125	<20
Toluene (Methyl benzene)	25.00	24.75	99	25.00	24.00	96	3.1	75-125	<20
1,1,1-Trichloroethane	25.00	24.50	98	25.00	24.75	99	1.0	75-125	<20
Trichloroethene	25.00	24.75	99	25.00	23.25	93	6.3	75-125	<20
o-Xylene	25.00	24.25	97	25.00	24.50	98	1.0	75-125	<20
m,p-Xylenes	50.00	48.50	97	50.00	48.50	97	<1	75-125	<20

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ANALYTICAL RESULTS

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attn: Kathy Foley

Site

Sun Valley, CA

Page: 10

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: GEN.-MINERALS, General Minerals

QUALITY CONTROL REPORT

QC Batch No: 060804 Sample Spiked: 060804 QC Prepared: 06/08/2004 QC Analyzed: 06/11/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	4.0	20.00	24.00	100	20.00	24.00	100	<1	80-120	<15
Total Alkalinity	4.0	20.00	24.00	100	20.00	24.00	100	<1	80-120	<15
Nitrate	19.7	0.50	18.18	90	0.50	18.79	93	3.3	80-120	<15
Nitrite	ND	0.20	0.20	98	0.20	0.20	99	1.0	80-120	<15
Chloride (Cl), Total	5.00	20.00	25.00	100	20.00	25.00	100	<1	80-120	<15
Fluoride, Total	0.470	1.00	1.73	118	1.00	1.75	119	<1	80-120	<15
Hardness (Ca,Mg) as CaCO3	ND	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Sulfate	62.4	20.00	81.58	99	20.00	83.22	101	2.0	80-120	<15
Surfactants (MBAS)	ND	0.20	0.19	96	0.20	0.19	93	3.2	80-120	<15
Aluminum	0.102	1.00	1.14	103	1.00	1.14	103	<1	80-120	<15
Calcium	0.641	1.00	1.61	98	1.00	1.61	98	<1	80-120	<15
Copper	ND	1.00	1.06	106	1.00	1.06	106	<1	80-120	<15
Iron	0.217	1.00	1.25	103	1.00	1.25	103	<1	80-120	<15
Magnesium	ND	1.00	0.98	98	1.00	1.00	100	2.0	80-120	<15
Manganese	ND	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15
Potassium	ND	10.00	9.40	94	10.00	9.50	95	1.1	80-120	<15
Sodium	0.246	1.00	1.23	99	1.00	1.25	100	1.0	80-120	<15
Zinc	ND	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15

QC Batch No: 060804 Sample Spiked: 060804 QC Prepared: 06/08/2004 QC Analyzed: 06/11/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Nitrate	0.50	0.48	96	80-120
Nitrite	0.20	0.20	98	80-120
Chloride (Cl), Total	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Fluoride, Total	1.00	1.10	110	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
pH (pH units)	7.00	7.00	100	80-120
Sulfate	20.00	19.60	98	80-120
Surfactants (MBAS)	0.20	0.20	99	80-120

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ANALYTICAL RESULTS

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: GEN.-MINERALS, General Minerals

QC Batch No: 060804 Sample Spiked: 060804 QC Prepared: 06/08/2004 QC Analyzed: 06/11/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Total Dissolved Solids	100.00	92.00	92	80-120
Aluminum	1.00	0.96	96	80-120
Calcium	1.00	0.96	96	80-120
Copper	1.00	1.02	102	80-120
Iron	1.00	0.99	99	80-120
Magnesium	1.00	0.92	92	80-120
Manganese	1.00	1.01	101	80-120
Potassium	10.00	9.20	92	80-120
Sodium	1.00	0.89	89	80-120
Zinc	1.00	1.01	101	80-120

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ANALYTICAL RESULTS

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attn: Kathy Foley

Site

Sun Valley, CA

Page: 12

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
29365	06/08/2004	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 061404 Sample Spiked: 29408.01 QC Prepared: 06/14/2004 QC Analyzed: 06/14/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.169	0.50	0.61	91	0.50	0.62	92	1.1	80-120	<15

QC Batch No: 061404 Sample Spiked: 29408.01 QC Prepared: 06/14/2004 QC Analyzed: 06/14/2004

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Boron	0.520	0.512	1.6	<15	0.50	0.44	88	80-120

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Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate

American Environmental Testing Laboratory Inc.
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Data Qualifiers and Descriptors

ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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GROUNDWATER MONITORING REPORT
FIRST QUARTER 1998

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Los Angeles, California

Prepared by

Law/Crandall

Los Angeles, California

April 30, 1998

Law/Crandall Project 70111-2-0346

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LAW Crandall
LAWGIBB Group Member

April 30, 1998

Mr. Mike McAllister
Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **First Quarter 1998**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the first quarter 1998 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area fell about 13 feet between the third quarter 1997 and first quarter 1998. Groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, zinc, and total dissolved solids (TDS) in upgradient well 4928B and TDS and tetrachloroethene (PCE) in downgradient well 4928A. However, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

LAW Engineenng and Environmental Services, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554
213-889-5300 • Fax: 213-721-6700

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the first quarter 1998 groundwater monitoring results. Law/Crandall collected groundwater samples on March 12, 1998 and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified for such analyses by the State Department of Health Services.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the first quarter 1998 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March 1998. The water level at 4928A fell 12.7 feet and the water level at 4928B fell 12.6 feet since August 1997. Groundwater levels declined despite spreading of about 13,500 acre-feet of water by the Los Angeles County Department of Public Works at Hansen, Branford, and Tujunga spreading grounds from August 1997 through February 1998.

Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the historic water level data. We contoured the groundwater levels for March 1998. Figure 2 shows the groundwater contours.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K)

in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the southwest during March, we used K in both the north-south, east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.0014 ft/ft in March. Groundwater flow for March was 0.42 ft/day or 153 ft/year.

GROUNDWATER QUALITY

We collected groundwater samples on March 12, 1998 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from AETL of groundwater samples collected during the first quarter of 1998. Appendix C also contains the chain-of-custody records

Inorganics

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for most inorganic constituents. However, in upgradient well 4928B, levels of iron, manganese, zinc, and total dissolved solids (TDS) exceeded drinking water limits. In downgradient well 4928A, levels of TDS exceeded drinking water limits. Table 2 shows selected first quarter 1998 results compared to California Drinking Water Standards.

Table 2: Site Water Quality vs. California Drinking Water Standards, 1st Quarter 1998

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) March 1998	4928B (upgradient) March 1998
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	593	802
Chloride (Cl)	250	50	56
Sulfate (SO_4)	250	84	40
Nitrate (NO_3)	45	7.44	<0.1
Iron (Fe)	0.3	0.15	51.5
Manganese (Mn)	0.05	<0.01	0.18
Zinc (Zn)	5	0.54	7.98
Organic (µg/L)			
Trichloroethene (TCE)	5	0.6	0.5
Tetrachloroethene (PCE)	5	7.0	1.9
Trichlorofluoromethane	150	0.3	<1
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5
1,1-dichloroethane (1,1-DCA)	5	1.9	1.3
cis-1,2-dichloroethene (cis-1,2-DCE)	6	<0.5	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5

* *Source: CCR, Title 22, Division 4, Chapter 15*

The levels of iron, zinc, and TDS in upgradient well 4928B may be attributed to purge volume. On the day of the sampling event, a steady flow was not established during pumping of the well and we were unable to purge three well volumes of water. Purging of the well was minimized to collect the samples before the flow completely stopped. The water from the well was light brown in color and appeared to contain sand and silt.

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Levels of manganese have been decreasing since 1996 in upgradient well 4928B. The decrease may be attributed to the discontinued use of acid preservative in the sample bottles and the decrease in water surface elevation. However, even though manganese levels have decreased, the manganese level in upgradient well 4928B remains above drinking water standards.

The TDS level in downgradient well 4928A appears to have stabilized since the last reporting period. However, the level of TDS in this well remains above drinking water standards.

Organics

During the first quarter, trace amounts of dichlorodifluoromethane, 1,1-dichloroethane, tetrachloroethene (PCE), and trichloroethene (TCE) were detected in upgradient well 4928B. Downgradient well 4928A contained trace amounts of dichlorodifluoromethane, 1,1-dichloroethane PCE, TCE, and trichlorofluoromethane. Levels were below California Drinking Water Standards except for PCE in 4928A, which was slightly above the drinking water limit. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have declined despite heavy precipitation and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination is low. Dichlorodifluoromethane, 1,1-dichloroethane, PCE, and TCE are present in both the upgradient and downgradient wells, suggesting that the landfill is not the source of the contamination. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL

Darren R. Ness
Staff Scientist

William J. O'Braitis, C.E.G. 2037
Senior Geologist

for Richard W. Shatz, C.H.G. 84
Principal Hydrogeologist

i:\70111\92_proj\20346\98\034698q1.doc/DN:swb
(2 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 5TH day of MAY, 1998, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

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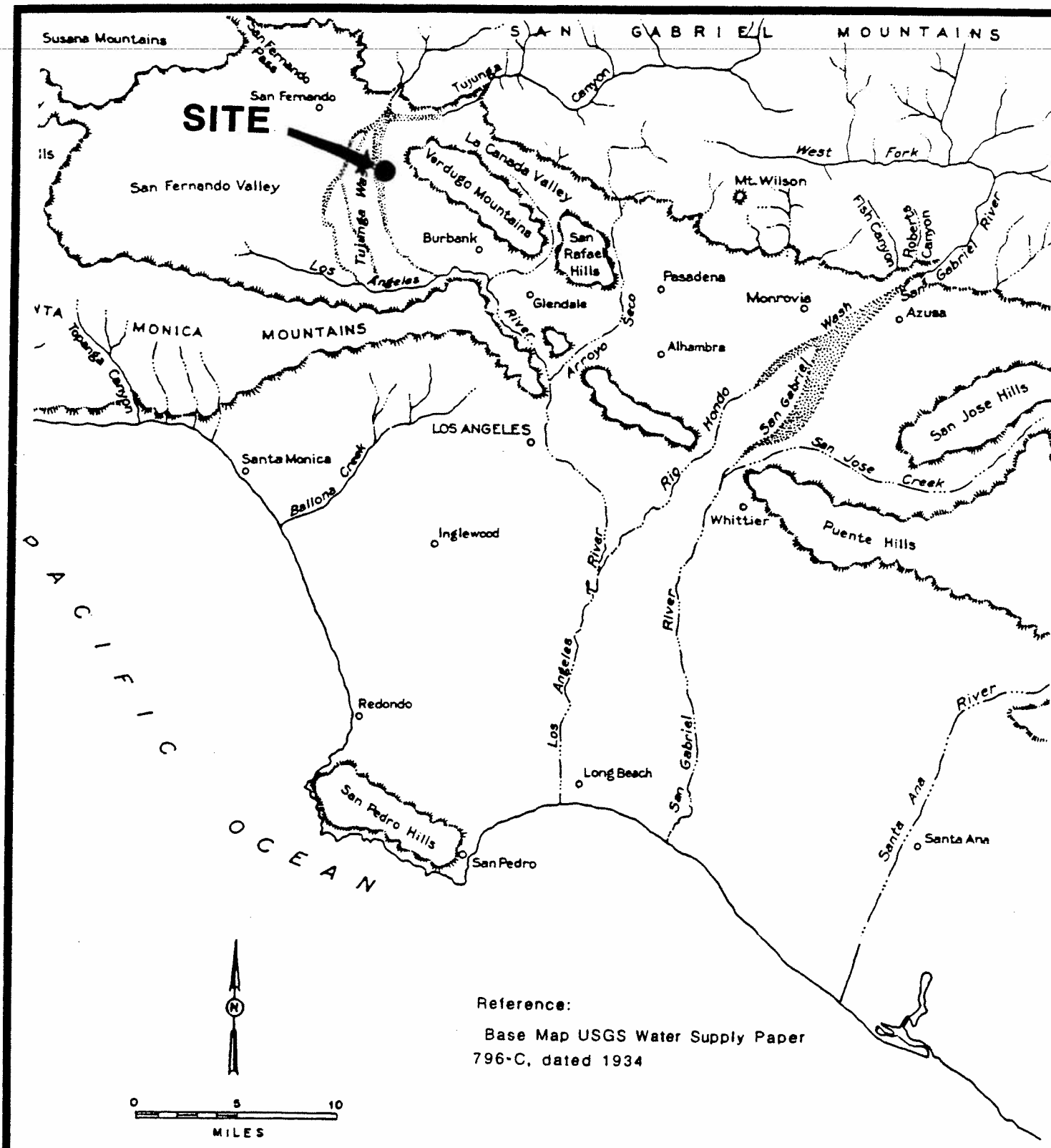

Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

002969 FIGURE 1

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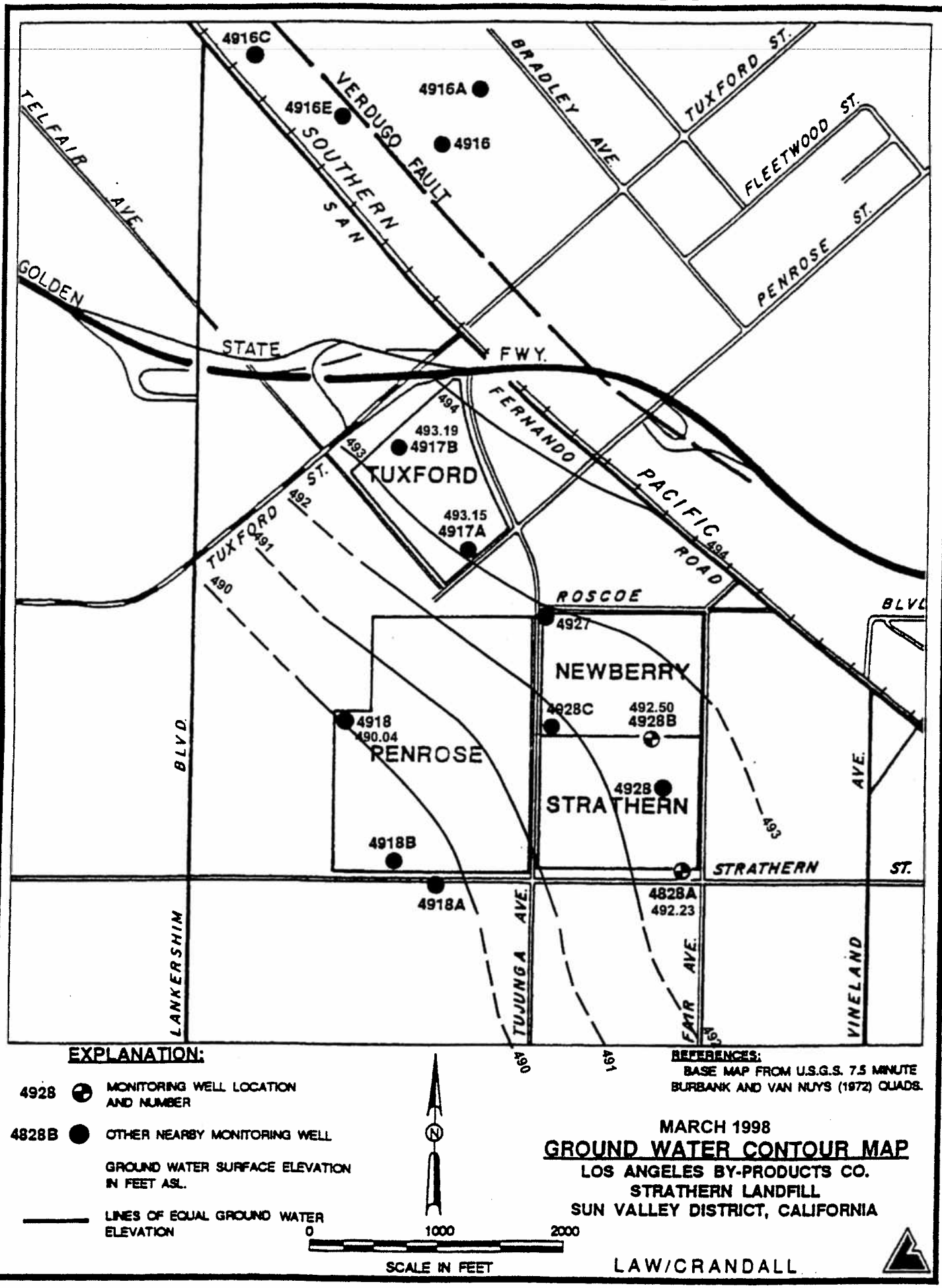

EXPLANATION:

4928 — MONITORING WELL LOCATION AND NUMBER

4828B — OTHER NEARBY MONITORING WELL

GROUND WATER SURFACE ELEVATION IN FEET ASL.

LINES OF EQUAL GROUND WATER ELEVATION

SCALE IN FEET: 0 1000 2000

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MARCH 1998

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL

JOB 70111-2-0346.0001 DATE 4/22/98 F.T. ____ DR. MN/NH O.E. ____ DN ____ CHKD ____

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FIGURE 2

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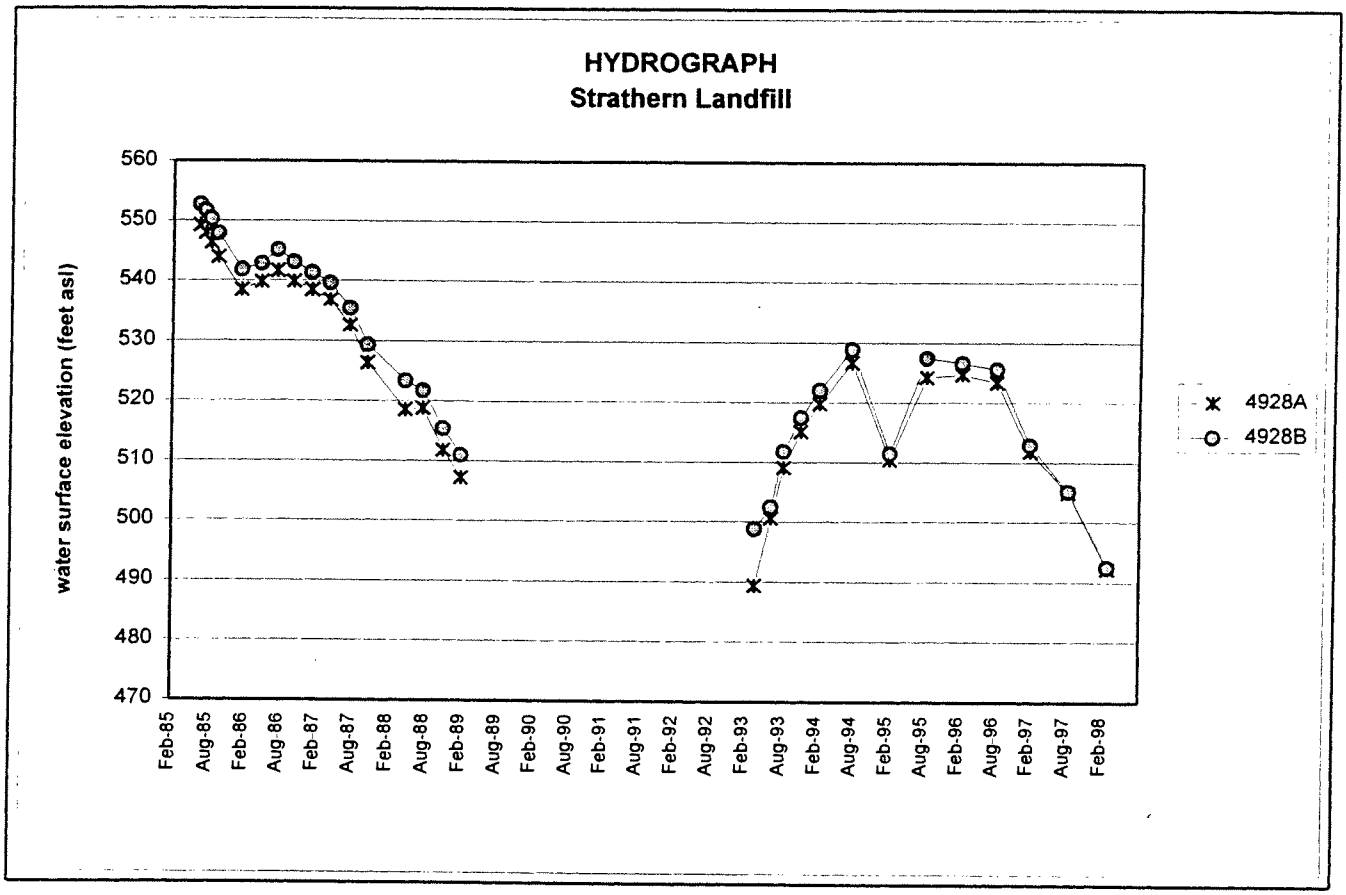
JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____



LAW/CRANDALL

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FIGURE 3

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 4/30/98 F.T. _____ DR. _____ O.E. DRW CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	66	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-86		518.56	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	27	34	6.4	<2.0	320	84	50	7.44	0.6	0.40	593	<10		

NM = Not measured
NS = Not sampled

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CONFIDENTIAL

JOB 70111-2-0346 DATE 4/30/98 F.T. _____ DR. _____ O.E. DRW CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
		TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.60	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

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CONFIDENTIAL

JOB 70111-2-0346 DATE 4/30/98 F.T. _____ DR. _____ O.E. DRM CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES						GENERAL MINERAL(ppm)									
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	73.6	1152	NA	502	1110	7.0	97.1	35	81	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		

NM = Not measured
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JOB 70111-2-0346 DATE 4/30/98 F.T. _____ DR. _____ O.E. DRN CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL

NM = Not measured
NS = Not sampled

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

002978

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

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FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

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Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS

AND

CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Number of Pages: 13
Date Received : 03/12/98
Date Reported : 04/03/98

Attn : Bill O'Braitis
Phone: 213/889-5300

AETL Job Number: 9553
Project Number : 70111-2-0346

Site: Strathern

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrano

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-27 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE46230	AE46231	AE46233
				Client ID	4928A	4928B	M.Blank
				Date Sampled	03-12-98	03-12-98	03-12-98
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	**320**	**502**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	ND	ND	ND
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	03-18-98	**320**	**502**	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	03-20-98	**600**	**650**	ND
Total Dissolved Solids	160.1	mg/L	10	03-19-98	**593**	**802**	ND
Chemical Oxygen Demand	410.4	mg/L	10	03-12-98	ND	ND	ND
Specific Conductance	120.1	umhos/cm	10	03-20-98	**890**	**1,110**	ND
pH	150.1	std. unit	1.00	03-12-98	**7.25**	**7.03**	ND
Sulfate	375.4	mg/L	10	03-20-98	**84**	**40**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	03-14-98	**0.11**	**0.11**	ND
Nitrate	352.1	mg/L	0.1	03-14-98	**7.44**	ND	ND
Nitrite as N	354.1	mg/L	0.02	03-12-98	**0.02**	**0.03**	ND
Chloride	325.3	mg/L	1	03-23-98	**50**	**56**	ND
Fluoride	340.2	mg/L	0.2	03-20-98	**0.4**	**0.2**	ND
Boron	SM4500B	mg/L	0.2	03-27-98	**0.6**	**0.5**	ND
Anions Total	Calc.	meq/L	0.01	03-24-98	**8.45**	**10.7**	ND
Cations Total	Calc.	meq/L	0.01	03-24-98	**8.90**	**11.4**	ND
Ion Balance	Calc.	%	0.01	03-24-98	**2.59**	**3.40**	ND
Aluminum	6010	mg/L	0.1	03-24-98	ND	**0.7**	ND
Copper	6010	mg/L	0.02	03-24-98	ND	**0.02**	ND
Cadmium	6010	mg/L	0.005	03-24-98	ND	ND	ND
Chromium (Total)	6010	mg/L	0.01	03-24-98	ND	ND	ND
Nickel	6010	mg/L	0.04	03-24-98	ND	ND	ND
Lead	6010	mg/L	0.05	03-24-98	ND	**0.14**	ND
Iron	6010	mg/L	0.05	03-24-98	**0.15**	**51.5**	ND
Calcium	6010	mg/L	0.5	03-24-98	**101**	**97.1**	ND
Magnesium	6010	mg/L	0.5	03-24-98	**26.5**	**34.7**	ND
Manganese	6010	mg/L	0.01	03-24-98	ND	**0.18**	ND
Potassium	6010	mg/L	1.0	03-24-98	**6.4**	**9.0**	ND
Sodium	6010	mg/L	0.5	03-24-98	**34.3**	**80.9**	ND
Zinc	6010	mg/L	0.03	03-24-98	**0.54**	**7.98**	ND

ND = Not Detected at the Detection Limit. **DL** = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-19 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE46230	AE46231	AE46232	AE46233		
Client Sample ID		4928A	4928B	T. Blank	M.Blank		
Date Sampled		03-12-98	03-12-98	03-12-98	03-12-98		
Date Extracted		03-19-98	03-19-98	03-19-98	03-19-98		
Date Analyzed		03-19-98	03-19-98	03-19-98	03-19-98		
Matrix		Aqueous	Aqueous	Aqueous	Aqueous		
Units		µg/L	µg/L	µg/L	µg/L		
Dilution Factor		1	1	1	1		
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**		
Benzene	0.5	ND	ND	ND	ND		
Bromobenzene	0.5	ND	ND	ND	ND		
Bromochloromethane	0.5	ND	ND	ND	ND		
Bromodichloromethane	0.5	ND	ND	ND	ND		
Bromoform	0.5	ND	ND	ND	ND		
Bromomethane	0.5	ND	ND	ND	ND		
n-Butylbenzene	0.5	ND	ND	ND	ND		
sec-Butylbenzene	0.5	ND	ND	ND	ND		
tert-Butylbenzene	0.5	ND	ND	ND	ND		
Carbon Tetrachloride	0.5	ND	ND	ND	ND		
Chlorobenzene	0.5	ND	ND	ND	ND		
Chloroethane	0.5	ND	ND	ND	ND		
Chloroform	0.5	ND	ND	ND	ND		
Chloromethane	0.5	ND	ND	ND	ND		
2-Chlorotoluene	0.5	ND	ND	ND	ND		
4-Chlorotoluene	0.5	ND	ND	ND	ND		
Dibromochloromethane	0.5	ND	ND	ND	ND		
Dibromomethane	1	ND	ND	ND	ND		
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND		
1,2-Dibromoethane	0.5	ND	ND	ND	ND		
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND		
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND		
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND		
Dichlorodifluoromethane	0.5	**1.5**	**2.1**	ND	ND		
1,1-Dichloroethane	0.5	**1.9**	**1.3**	ND	ND		
1,2-Dichloroethane	0.5	ND	ND	ND	ND		
1,1-Dichloroethene	0.5	ND	ND	ND	ND		
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND		

ND = Not Detected at the Detection Limit
DL = Detection Limit

American Environmental Testing Laboratory Inc.

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE46230	AE46231	AE46232	AE46233		
Client Sample ID		4928A	4928B	T. Blank	M.Blank		
Date Sampled		03-12-98	03-12-98	03-12-98	03-12-98		
Date Extracted		03-19-98	03-19-98	03-19-98	03-19-98		
Date Analyzed		03-19-98	03-19-98	03-19-98	03-19-98		
Matrix		Aqueous	Aqueous	Aqueous	Aqueous		
Units		µg/L	µg/L	µg/L	µg/L		
Dilution Factor		1	1	1	1		
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**		
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND		
1,2-Dichloropropane	0.5	ND	ND	ND	ND		
1,3-Dichloropropane	0.5	ND	ND	ND	ND		
2,2-Dichloropropane	0.5	ND	ND	ND	ND		
1,1-Dichloropropene	0.5	ND	ND	ND	ND		
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND		
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND		
Ethylbenzene	0.5	ND	ND	ND	ND		
Freon 113	1	ND	ND	ND	ND		
Hexachlorobutadiene	0.5	ND	ND	ND	ND		
Isopropylbenzene	0.5	ND	ND	ND	ND		
p-Isopropyltoluene	0.5	ND	ND	ND	ND		
Methylene Chloride	1	ND	ND	ND	ND		
Napathalene	1	ND	ND	ND	ND		
n-Propylbenzene	0.5	ND	ND	ND	ND		
Styrene	0.5	ND	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND		
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND		
Tetrachloroethene	0.5	**7.0**	**1.9**	ND	ND		
Toluene	0.5	ND	ND	ND	ND		
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND		
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND		
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND		
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND		
Trichloroethene	0.5	**0.6**	**0.5**	ND	ND		
Trichlorofluoromethane	1	**0.3**	ND	ND	ND		
1,2,3-Trichloropropane	1	ND	ND	ND	ND		
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND		
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND		
Vinyl Chloride	0.5	ND	ND	ND	ND		
o-Xylene	0.5	ND	ND	ND	ND		
m & p Xylenes	1	ND	ND	ND	ND		

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-24 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Alkalinity Total as $CaCO_3$	310.1	03-18-98	100	100	<1	80	120	<15
Hardness Total as $CaCO_3$	130.2	03-20-98	100	100	<1	80	120	<15
Chemical Oxygen Demand	410.4	03-12-98	100	106	5.8	80	120	<15
Sulfate	375.4	03-20-98	94	94	<1	80	120	<15
Surfactants(MBAS)	425.1	03-20-98	90	90	<1	80	120	<15
Nitrate	352.1	03-20-98	91	91	1.8	80	120	<15
Nitrite as N	354.1	03-12-98	100	100	<1	80	120	<15
Chloride	325.3	03-23-98	100	100	<1	80	120	<15
Fluoride	340.2	03-20-98	92	90	2.2	80	120	<15
Boron	SM4500B	03-27-98	100	95	5.13	80	120	<15
Aluminum	6010	03-24-98	100	102	1.0	80	120	<15
Copper	6010	03-24-98	101	102	1.0	80	120	<15
Cadmium	6010	03-24-98	98	99	1.0	80	120	<15
Chromium (Total)	6010	03-24-98	100	101	1.0	80	120	<15
Nickel	6010	03-24-98	95	96	1.1	80	120	<15
Lead	6010	03-24-98	94	94	1.1	80	120	<15
Iron	6010	03-24-98	102	103	1.0	80	120	<15
Calcium	6010	03-24-98	110	100	9.5	80	120	<15
Magnesium	6010	03-24-98	110	110	<1	80	120	<15
Manganese	6010	03-24-98	96	96	<1	80	120	<15
Potassium	6010	03-24-98	93	94	1.1	80	120	<15
Sodium	6010	03-24-98	100	100	<1	80	120	<15
Zinc	6010	03-24-98	98	99	1.0	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference,
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-19 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-19-98	NA	NA
Date Analyzed		03-19-98	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	105	75	125
Chlorobenzene	0.5	106	75	125
1,1-Dichloroethene	0.5	115	75	125
Toluene	0.5	105	75	125
Trichloroethene	0.5	104	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/12/98	03/12/98	03/12/98	**Detection**
Date Analyzed:	03/12/98	03/12/98	03/12/98	**Limit**
COD	ND	ND	ND	10

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	358	347	3.1

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: 524.2
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE46230	AE46231	AE46232	AE46233	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/19/98	03/19/98	03/19/98	03/19/98	**Detection**
Date Analyzed:	03/19/98	03/19/98	03/19/98	03/19/98	**Limit**
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	1
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	1
1,2- Dichlorobenzene	ND	ND	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	1.5	2.1	ND	ND	0.5
1,1- Dichloroethane	1.9	1.3	ND	ND	0.5
1,2- Dichloroethane	ND	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	ND	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1
Hexachlorobutadiene	ND	ND	ND	ND	0.5
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
Methylene Chloride	ND	ND	ND	ND	1
Naphthalene	ND	ND	ND	ND	1
N- Propylbenzene	ND	ND	ND	ND	0.5

(Continued)

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Units: ug/L

Lab ID: / **Sample No:**	AE46230 4928A	AE46231 4928B	AE46232 TRIP BLANK	AE46233 METHOD BLANK	**Detection Limit**
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	1
Tetrachloroethene	7.0	1.9	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	1
1,2,4- Trichlorobenzene	ND	ND	ND	ND	1
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	ND	0.5	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1
1,2,3- Trichloropropane	ND	ND	ND	ND	1
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1

QUALITY CONTROL SUMMARY

Lab ID:	AE46230	AE46231	AE46232	AE46233
Surrogate Percent Recovery				
Bromofluorobenzene	101	102	101	102
Dibromofluoromethane	90	92	85	89
Toluene-d8	101	99	100	101

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	105	105	<1
Chlorobenzene	107	108	<1
1,1- Dichloroethene	116	110	5.3
Toluene	106	107	1
Trichloroethene	104	104	<1

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/12/98	03/12/98	03/12/98	**Detection**
Date Analyzed:	03/24/98	03/24/98	03/24/98	**Limit**
Alkalinity by Titration				
Bicarbonate (as CaCO3)	320	502	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	320	502	ND	2
Calculation				
Anions Total (meq/L)	8.45	10.65	ND	0.01
Cations Total (meq/L)	8.90	11.40	ND	0.01
Ion Balance, (Percent)	2.59	3.40	ND	0.01
General				
Chloride (Cl), total	50	56	ND	1
Conductivity (umhos/cm @ 77F	890	1110	ND	10
Fluoride (F), total	0.4	0.2	ND	0.2
Hardness (Ca,Mg) as CaCO3	600	650	ND	2
Nitrate	7.44	ND	ND	0.1
Nitrite (as N), total	0.02	0.03	ND	0.02
PH (pH units)	7.25	7.03	ND	1.00
Sulfate (SO4)	84	40	ND	10
Surfactants (MBAS)	0.11	0.11	ND	0.05
Total Dissolved Solids	593	802	ND	10
Metals				
Aluminum (Al)	ND	0.7	ND	0.1
Calcium (Ca)	101	97.1	ND	0.5
Copper (Cu)	ND	0.02	ND	0.02
Iron (Fe)	0.15	51.5	ND	0.05
Magnesium (Mg)	26.5	34.7	ND	0.5
Manganese (Mn)	ND	0.18	ND	0.01
Potassium (K)	6.4	9.0	ND	1.0
Sodium (Na)	34.3	80.9	ND	0.5
Zinc (Zn)	0.54	7.98	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

QUALITY CONTROL SUMMARY

Lab ID:	AE46230	AE46231	AE46233
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	92	90	2.2
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate	91	91	1.8
Nitrite (as N), total	100	100	<1
Sulfate (SO4)	94	94	<1
Surfactants (MBAS)	90	90	<1
Metals			
Aluminum (Al)	100	102	1
Calcium (Ca)	110	100	9.5
Copper (Cu)	101	102	1
Iron (Fe)	102	103	1
Magnesium (Mg)	110	110	<1
Manganese (Mn)	96	96	<1
Potassium (K)	93	94	1.1
Sodium (Na)	100	100	<1
Zinc (Zn)	98	99	1

ND - Not Detected at The Detection Limit

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American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/27/98	03/27/98	03/27/98	**Detection**
Date Analyzed:	03/27/98	03/27/98	03/27/98	**Limit**
Boron (B)	**0.6**	**0.5**	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	100	95	5.1

ND - Not Detected at The Detection Limit

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American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/19/98	03/19/98	03/19/98	**Detection**
Date Analyzed:	03/24/98	03/24/98	03/24/98	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	**0.14**	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	98	99	1
Chromium (Cr)	100	101	1
Lead (Pb)	94	94	<1
Nickel (Ni)	95	96	1.1

ND - Not Detected at The Detection Limit

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SECOND 2005 SEMI-ANNUAL GROUNDWATER MONITORING REPORT (JULY – DECEMBER)

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB Order No. 91-086
File No. 58-137
CI No. 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY
Los Alamitos, California

Prepared by

URS Corporation
Rancho Cucamonga, California

URS Project No. 38000854

January 19, 2006

URS

URS

January 19, 2006

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA. 90720-3482

Subject: **Second 2005 Semi-Annual Groundwater Monitoring Report**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB File No. 58-137, Order No. 91-086, CI No. 7055
URS Project No. 38000854

Dear Mr. McAllister:

INTRODUCTION

The URS Corporation (URS) is pleased to present this report summarizing the second 2005 semi-annual groundwater-monitoring event conducted at the Strathern Landfill located at 8230 Tujunga Avenue, Sun Valley, California, (Site). The groundwater monitoring activities were performed to satisfy the requirements of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Waste Discharge Requirements (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) CI-7055 adopted by the RWQCB on December 2, 1991. The MRP requires semi-annual monitoring of groundwater quality. This report describes the Site activities, and presents analytical results generated from the groundwater samples collected on December 15, 2005 from the Strathern Landfill. A Site location map is provided as Figure 1. A monitoring well location map is included as Figure 2.

BACKGROUND

This section presents background information including a description of the site, monitoring requirements as adopted by the RWQCB and the groundwater monitoring well network.

SITE DESCRIPTION

The Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The Strathern Landfill is located adjacent to Penrose and Newberry Landfills as is shown on Figure 2. The landfill accepts solid inert waste consisting of uncontaminated soils, broken concrete, brick and aggregates. The site consists of 34.7 acres and has a capacity of 6,907,000 cubic yards.

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MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992 and opened for business on September 21, 1992. Groundwater monitoring is conducted to satisfy the requirements of WDR Order 91-086, MRP CI-7055, adopted by the RWQCB on December 2, 1991. The MRP requires semi-annual sampling and reporting of groundwater quality and quarterly reporting of waste disposal. This report presents the results of the second 2005 semi-annual groundwater monitoring activities at the Strathern Landfill. Waste disposal quantities are presented in Table 3 - Quantities of Fill Deposited During 2005.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of wells 4928A, 4928B and 4928C. Monitoring consists of measuring the groundwater levels, purging and sampling the monitoring wells. Figure 2 shows the monitoring well locations and Table 1 presents the monitoring well construction details.

FIRST 2005 SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

This section presents the second 2005 semi-annual monitoring results including groundwater level measurement and sampling procedures, measurement data, and laboratory analytical results for December 2005. This monitoring event consisted of measuring and sampling the groundwater from the two monitoring wells (4928A and 4928C) located on the site. Monitoring well 4928A is the downgradient well, while monitoring well 4928C is an upgradient well.

GROUNDWATER MEASURMENT AND SAMPLING PROCEDURES

Prior to collecting a groundwater sample, the depth to groundwater was measured to an accuracy of 0.01 feet in each monitoring well using an electronic water interface probe. The groundwater interface probe was decontaminated after use in each well using a solution consisting of laboratory grade detergent and distilled water.

To ensure that the water samples collected were representative of formation conditions, each monitoring well was purged of a minimum of three well volumes using the dedicated submersible pump located in each well. During the purging process, water quality parameters of pH, electrical conductivity (EC) and temperature were measured to monitor the effectiveness of removing stagnant water from each well. These parameters as well as the depth to groundwater measurements were noted on a Sample Collection Record generated for each well sampled. The Sample Collection Records are presented in Appendix B of this report. After purging, water levels in each well were allowed to recover to near static conditions.

Following the purging activities, groundwater samples were collected using the respective dedicated submersible pump for each well and were then placed into sample bottles provided by American Environmental Testing Laboratory, Inc. (AETL), a California state-certified

laboratory. Upon collection, the groundwater samples were placed on wet ice in a cooler and recorded on the chain of custody form. The groundwater samples were delivered to AETL approximately one hour after the last sample was collected. The samples were maintained on ice from the time they were collected until they were delivered to the laboratory. Holding times and preservative conditions were met for all of the samples delivered.

AETL was directed to analyze the samples for general minerals, volatile organic compounds (VOCs), chemical oxygen demand (COD) and for the metals boron, cadmium, chromium, lead and nickel.

GROUNDWATER LEVEL MEASUREMENT RESULTS

Between July 2005 and December 2005, groundwater levels rose 11.48 feet in monitoring well 4928A and 11.25 feet in monitoring well 4928C. Monitoring well 4928B has been dry since the first quarter of 2000 and was observed to be dry during this groundwater-monitoring event. Table 2 presents the groundwater level measurement data in tabular form.

The increasing groundwater levels observed in monitoring wells 4928A and 4928C are possibly due to the above average rainfall received in the Los Angeles region the 2004/2005 season. Figure 3 presents a Hydrograph based on the groundwater level data collected from monitoring wells 4928A, 4928B and 4928C.

A groundwater contour map was not prepared or flow velocities calculated for December of 2005 based on the lack of groundwater level data from monitoring well 4928B (third data point). However, the groundwater flow direction has historically been calculated to flow toward the south-southwest.

GROUNDWATER SAMPLE RESULTS

Groundwater samples were collected from monitoring wells 4928A and 4928C on December 15, 2005. Monitoring well 4928B was not sampled because it was dry.

URS measured carbon dioxide (CO_2), temperature, alkalinity, pH and EC in the field. Laboratory analysis were conducted on the samples for general minerals, VOCs, COD and for the metals; boron, cadmium, chromium, lead and nickel. The groundwater database in Appendix A contains the results of field and laboratory analyses for December 2005, as well as historical analysis results. Appendix B contains the Sample Collection Records for the December 2005 sampling event. Appendix C contains the analytical results and chain-of-custody records from AETL for the groundwater samples collected in December 2005. Appendix D presents a graphical representation of the water quality history and statistical distribution for total dissolved solids, chloride, sulfate, nitrate, tetrachloroethylene (PCE) and trichloroethylene (TCE).

Inorganics

Laboratory analytical results indicate that groundwater collected in December of 2005 meets the California Drinking Water Standards except for total dissolved solids (TDS) in the samples from

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wells 4928A and 4928C. Total dissolved solids concentrations in wells 4928A and 4928C decreased from 408 mg/L to 295 mg/L and 656 mg/L to 424 mg/L respectively from July 2005 to December 2005. This decrease may be related to the infiltration of the near record amount of precipitation experienced in the Los Angeles region during the 2004/2005 rainfall season. Table 4 presents the groundwater sample analysis results for December 2005 as compared to the California Drinking Water Standards.

Organics

Laboratory analyses indicate that the organic constituents for the samples collected in December 2005 meet the water quality criteria for the California Drinking Water Standards.

ANNUAL SUMMARY

This section presents a summary of monitoring results for 2004, including waste disposal, groundwater levels, and groundwater quality.

WASTE DISPOSAL

During 2005, Los Angeles By- Products received about 135,480 tons of solid waste from off-site sources. Table 2 shows the monthly quantities of waste deposited during each month of 2005.

GROUNDWATER LEVELS

Ground water levels increased approximately 12 feet between the fourth quarter 2004 and the fourth quarter 2005. The groundwater levels for 2005 are similar to the levels recorded in 1997. Figure 3 contains the hydrographs for the on-site monitoring wells. The groundwater database in Appendix A contains the water level data for 2005, as well as the data from previous years.

GROUNDWATER QUALITY

URS collected groundwater samples from wells 4928A and 4928C during the second and fourth quarter of 2005.

Laboratory analyses indicated that during 2005, the groundwater met California Drinking Water Standards for most constituents. At Well 4928C during the second quarter, TDS and EC also exceeded the secondary drinking water standards of 500 mg/l and 900μmhos/cm, respectively. During the fourth quarter, total dissolved solids (TDS) and electrical conductivity (EC) again exceeded the secondary drinking water standards of 500 mg/l and 900μmhos/cm, respectively, at Well 4928C.

During 2005, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) of 5.25μg/l in Well 4928C during the second quarter.

URS

However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local ground water quality. Appendix D contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS

Groundwater at the Strathern Landfill was measured and sampled using two groundwater-monitoring wells located on-site. Field measurements indicate that between July 2005 and December 2005, groundwater levels have risen approximately 11 feet in monitoring wells 4928A and 4928C. Monitoring well 4928B has been dry since the first quarter of 2000 and was observed to be dry during this groundwater-monitoring event. The increasing groundwater levels observed are possibly due to the continued infiltration of rainfall received in the Los Angeles region during the 2004/2005 season.

The levels of inorganic constituents tested in water samples from the two monitoring wells meet California Drinking Water Standards. Organic constituents for the samples collected in June 2005 meet the water quality criteria for the California Drinking Water. The concentrations of organic constituents in on-site wells are similar to previous monitoring events.

There does not appear to be a correlation between the landfill operations and the constituents detected in the groundwater. Because the landfill only receives inert solid waste and the amount of water-soluble material is negligible, URS believes the potential for leachate from the landfill continues to be low. The groundwater-monitoring program will continue at the Strathern Landfill semi-annually.

-oOo-

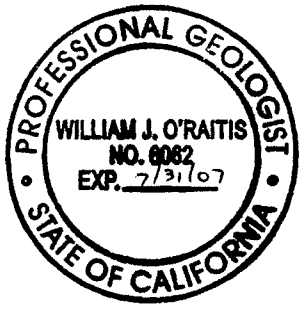
URS

We trust this letter report meets your needs, and we appreciate the opportunity to be of assistance to Los Angeles By-Products. If you should have any questions regarding this report, please contact the undersigned at (909) 980-4000.

Respectfully Submitted,
URS CORPORATION

Mike W. Makerov FOR
Geologist

William J. O'Braitis, PG
Senior Geologist



cc: Regional Water Quality Control Board – Technical Support Unit

CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Regional Board's requirements.

I declare under penalty of perjury that the foregoing information is true and correct. Executed this 20th day of January, 2006, at Los Alamitos, California.

M.R. McAllister
President
Los Angeles By-Products Company

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (ft asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2 - Depth to Water Measurements

December 2005 Groundwater Elevation			
Well I.D.	Top of Casing Elevation (ft asl)	Depth to Groundwater (feet below top of casing)	Groundwater Elevation (ft)
4928A	803.78	304.10	499.68
4928B	823.09	>823.09 (dry)	>823.09 (dry)
4928C	823.37	318.50	504.87

Table 3: Quantities of Fill Deposited During 2005

Quarter	Month	Tons	Cubic Yards* (Approximate)
1	January	19,786	15,829
	February	12,207	9,766
	March	20,313	16,251
2	April	32,996	26,397
	May	35,193	28,155
	June	32,860	26,288
3	July	35,181	28,145
	August	33,650	26,920
	September	23,435	18,748
4	October	23,060	18,448
	November	24,797	19,838
	December	30,987	24,790
Totals		135,480	108,384

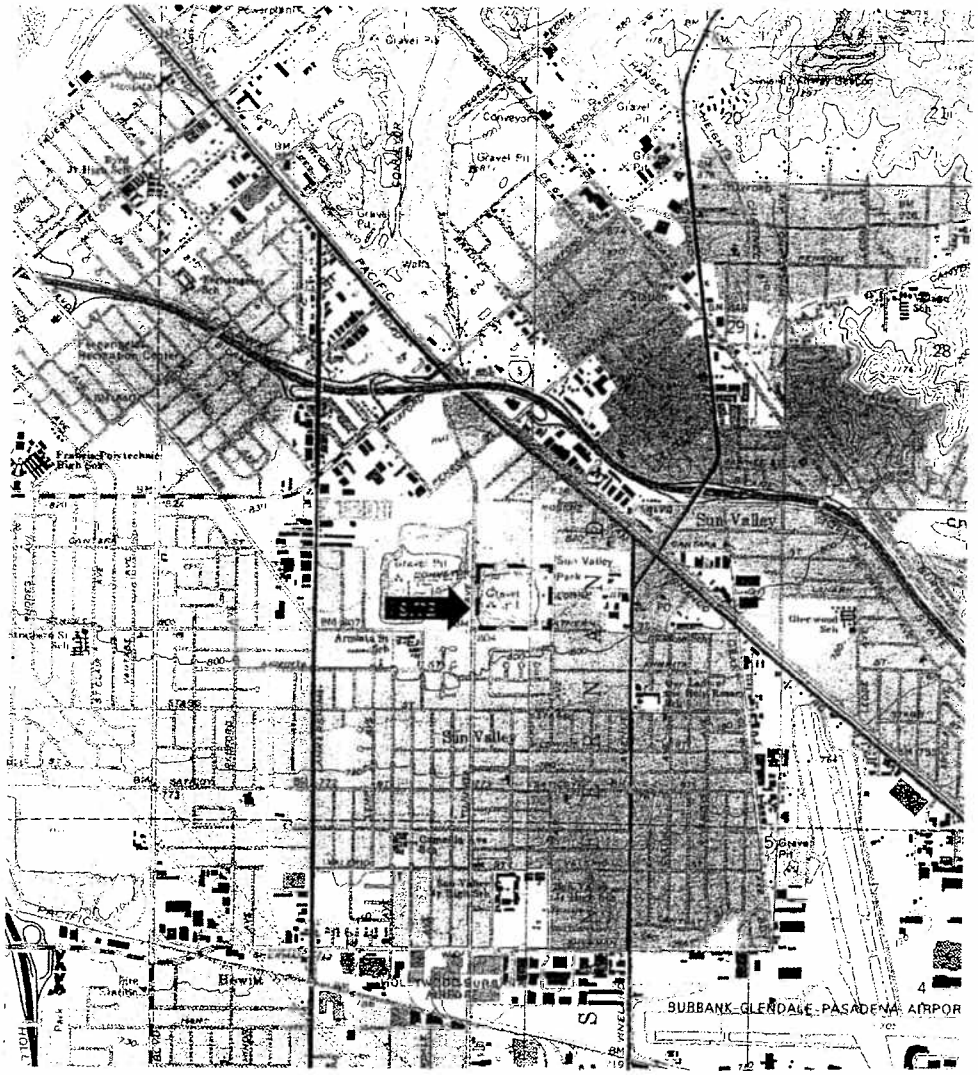
* 1.25 tons per cubic yard

Table 4: Site Water Quality vs. California Drinking Water Standards
December 2005

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
			4928A (downgradient)		4928C (upgradient)	
			June	December	June	December
Field Measurements						
pH		6-9	7.34	6.63	7.22	6.44
Temperature	°F	-	67.8	63.9	75.5	65.1
Electrical Conductivity	µmhos/cm	900*	721	598	1160	842
Carbon Dioxide	mg/L	-	36	46	66	60
Alkalinity	mg/L	-	300	300	250	300
Inorganic						
pH		6-9	7.04	6.53	6.95	6.83
Electrical Conductivity	µmhos/cm	900*	676	698	1065	950
Alkalinity	mg/L	-	248	220	388	330
Total Dissolved Solids (TDS)	mg/L	500*	408	295	656	424
Chloride (Cl)	mg/L	250*	23.9	24.4	56.2	37.9
Sulfate (SO4)	mg/L	250*	74.0	74.2	75.9	74.8
Nitrate (as N)	mg/L	10**	2.25	3.65	5.5	4.6
Boron (B)	mg/L	1**	0.174	0.172	0.24	0.195
Chemical Oxygen Demand (COD)	mg/L	-	<5	<5	<5	<5
Bicarbonate (HCO3)	mg/L	-	248	220	388	330
Iron (Fe)	mg/L	0.3*	0.089	0.023	<0.02	0.031
Carbonate (CO3)	mg/L	-	<1	<1	<1	<1
Cadmium (Cd)	µg/L	5	<5	<5	<5	<5
Chromium (Cr)	µg/L	50	<10	<10	<10	<10
Lead (Pb)	µg/L	15**	<15	<15	<15	<15
Nickel (Ni)	µg/L	100	<10	<10	<10	<10
Organic						
Benzene	µg/L	1	<0.25	<0.25	<0.25	<0.25
Trichloroethylene (TCE)	µg/L	5	0.70	0.70	0.67	0.80
Tetrachloroethylene (PCE)	µg/L	5	4.58	4.90	5.25	5.00
Vinyl Chloride (VC)	µg/L	0.5	<0.25	<0.25	<0.25	<0.25

1 – Source: CCR, Title 22, Division 4, Chapter 15
** - Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*
*** - Action level – Health-based advisory levels established by the Department of Health Services (DHS), as the primary MCLs.*

FIGURES



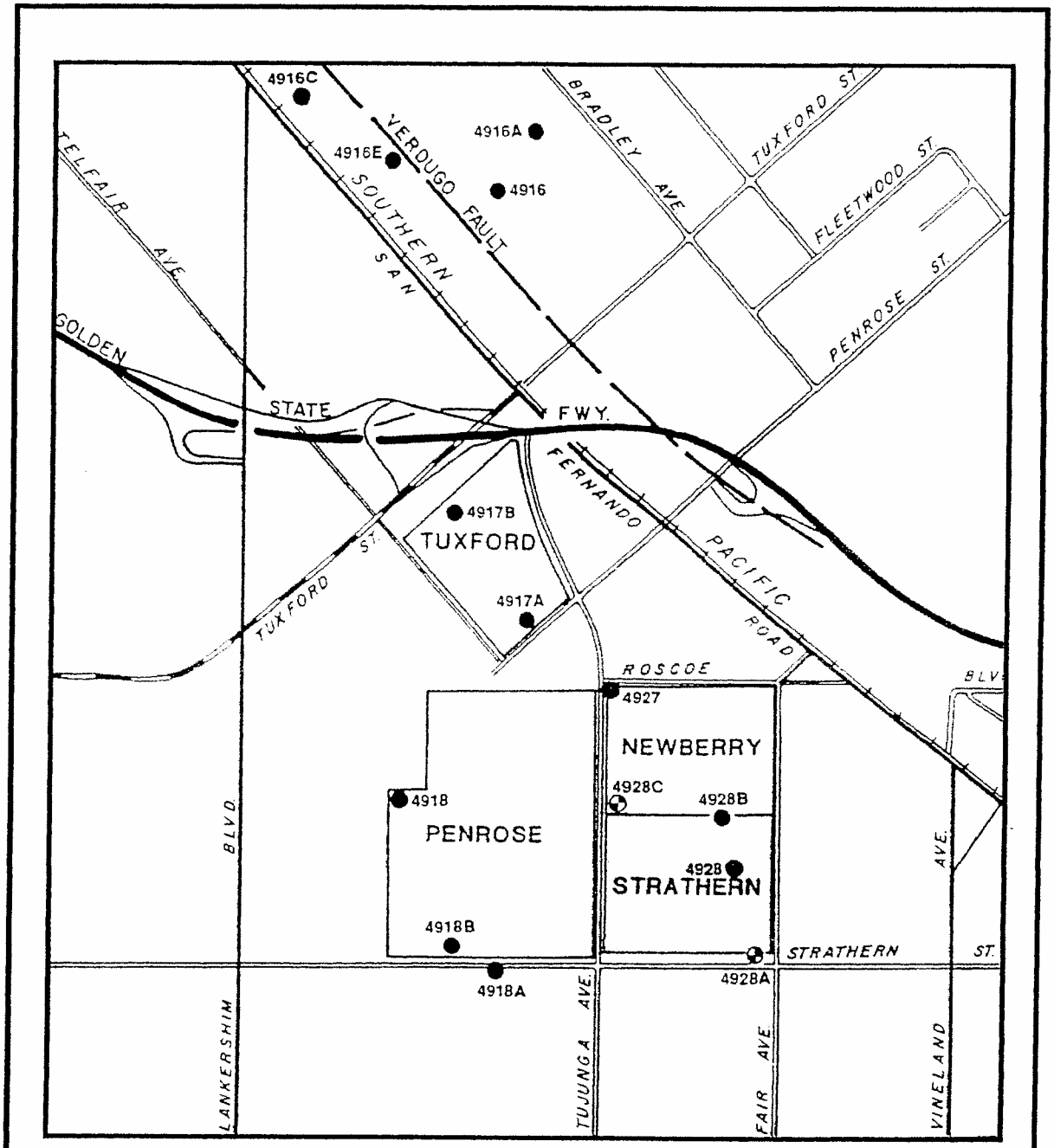
SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS COMPANY
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

REFERENCES: USGS 7.5 Minute Series Quadrangles, Burbank and Van Nuys, California, 1966 (Photorevised 1972).
SCALE: 1:24,000

URS

FIGURE 1


4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE
TUXFORD ST
FLEETWOOD ST
PENROSE ST
TELFAIR AVE
GOLDEN
STATE
FWY.
FERNANDO
PACIFIC
ROAD
4917B
TUXFORD
4917A
TUXFORD ST
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4918
PENROSE
4928
STRATHERN
AVE.
4918B
STRATHERN ST.
4928A
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE
VINELAND
N
W
E
S
Explanation:
4928A Monitoring Well Location
4918B Other Well Location
Approximate Scale:
0'
2000'
Scale in Feet
MONITORING WELL LOCATION MAP
Los Angeles By-Products Company
Strathem Landfill
Sun Valley, California
URS
FIGURE 2

CONFIDENTIAL

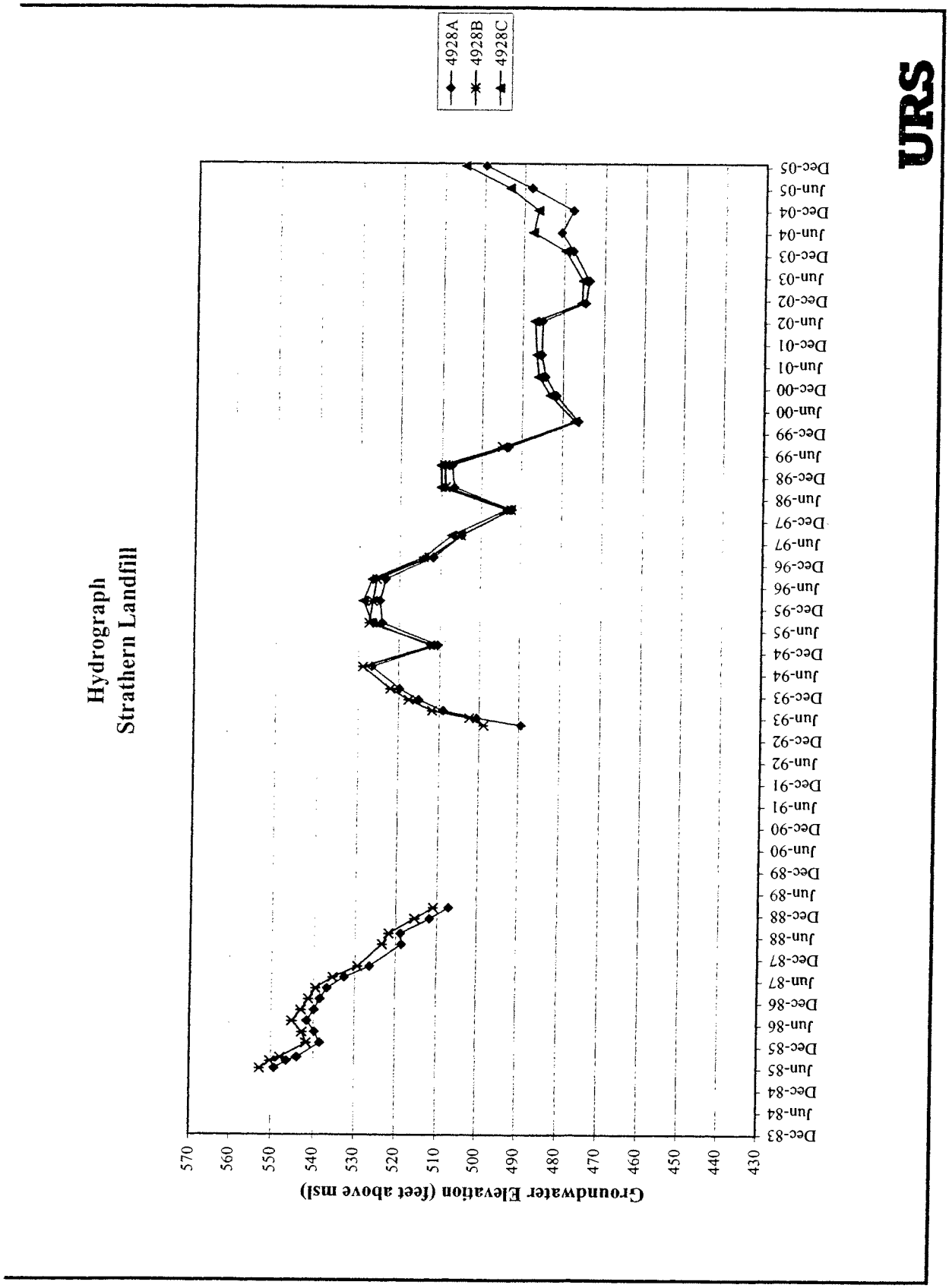
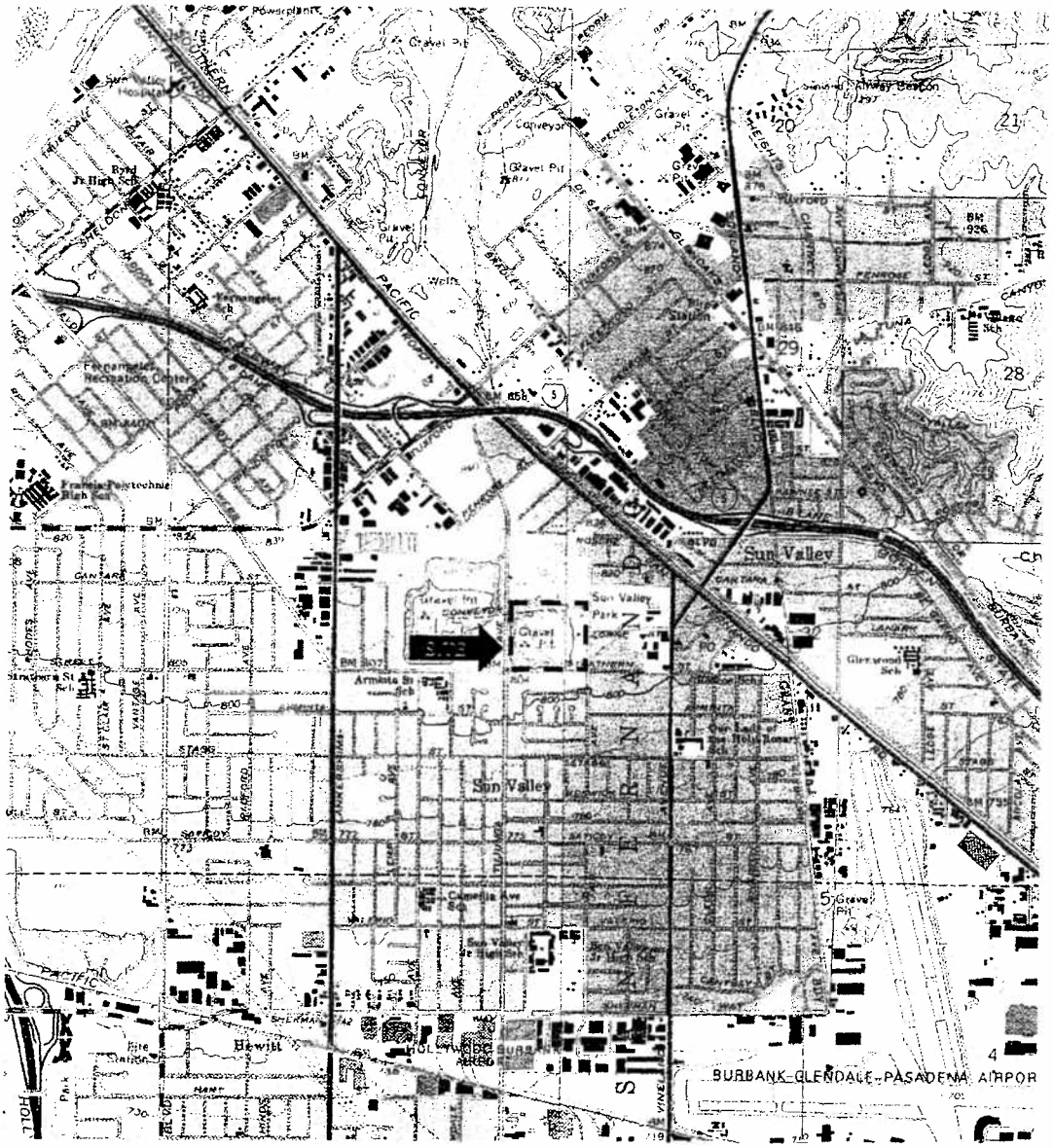


Figure 3



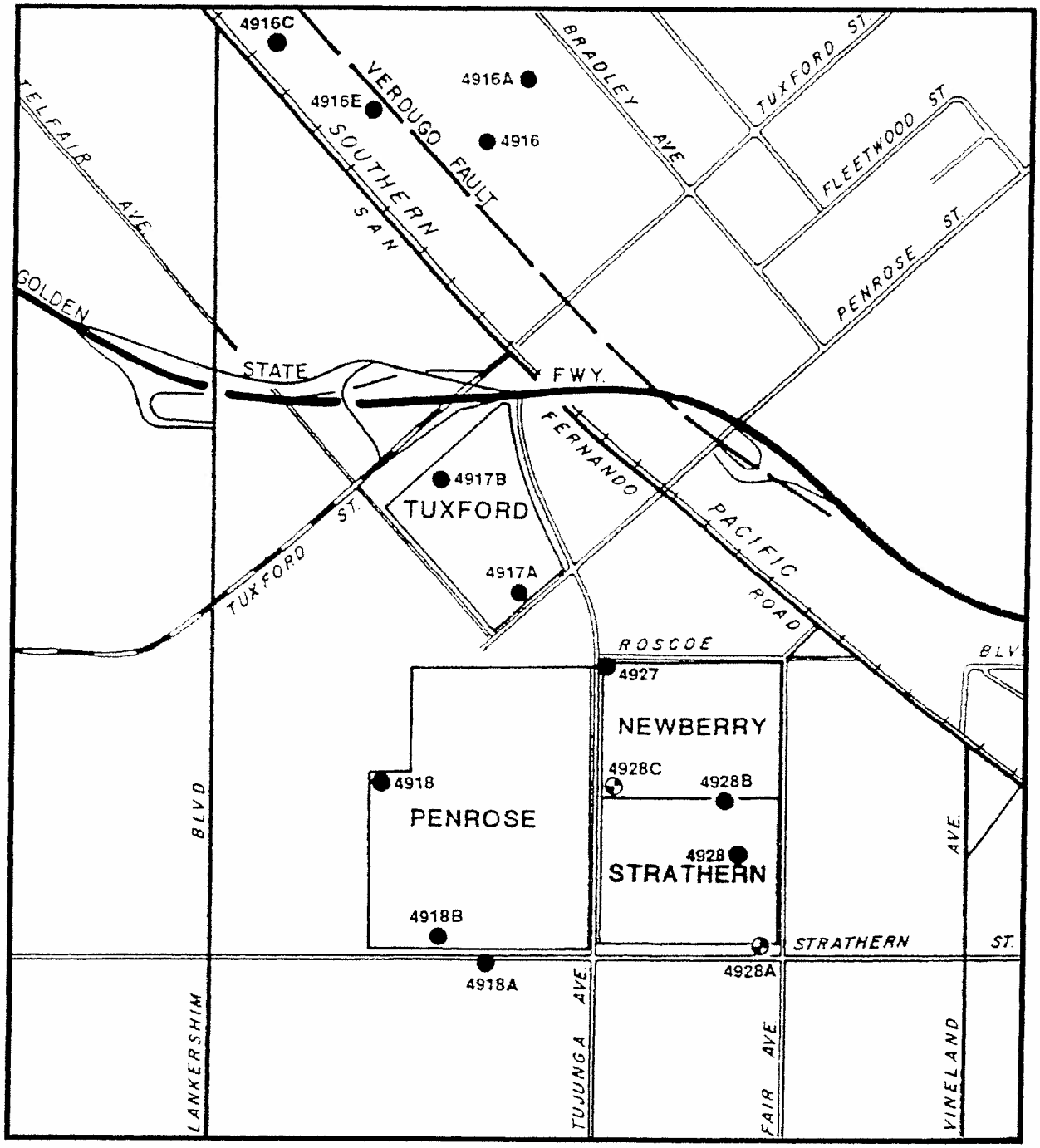
SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS COMPANY
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

REFERENCES: USGS 7.5 Minute Series Quadrangles, Burbank and Van Nuys, California, 1966 (Photorevised 1972).
SCALE: 1:24,000

URS

FIGURE 1



N
W E
S

Explanation:

- 4928A Monitoring Well Location
- 4918B Other Well Location

Approximate Scale:

0' 2000'

Scale in Feet

MONITORING WELL LOCATION MAP

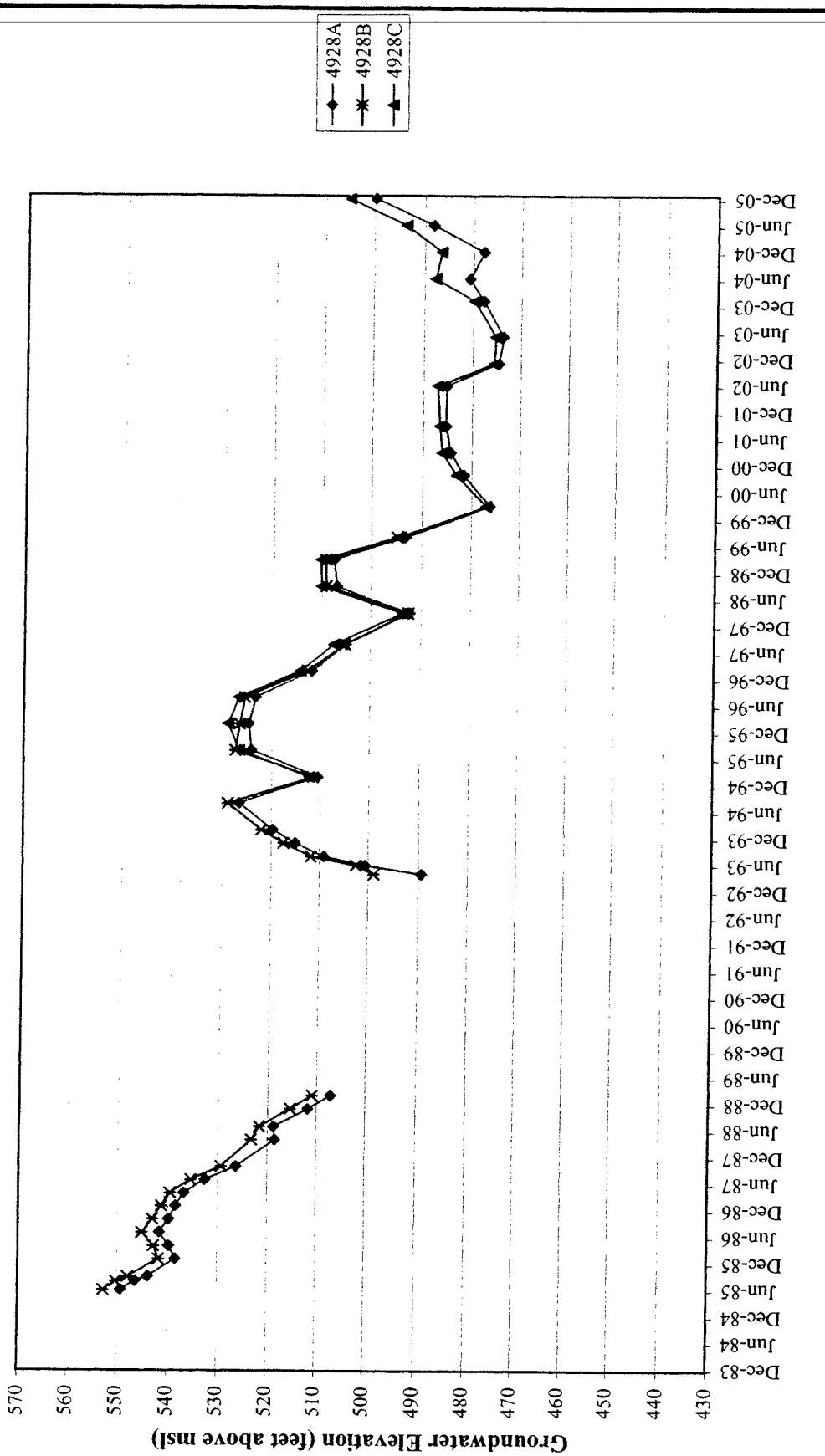
Los Angeles By-Products Company
Strathern Landfill
Sun Valley, California

URS

FIGURE 2

CONFIDENTIAL

Hydrograph
Strathern Landfill



URS

Figure 3

GROUNDWATER DATABASE

CONFIDENTIAL

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 38000854.10000

		WATER LEVEL	FIELD MEASUREMENTS					GENERAL MINERALS											GENERAL MINERALS (cont.)							ORGANICS				METALS				
POINT	DATE	REF PT. W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB SOURCE
	UNITS	FT. ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs		6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	803.78							7.20	120	28	48	6.0	0.0	363	75	65	15.0			650			1			1.0		0.70	#REF!	0.050	B&C
4928A	31-Dec-84							560	7.70	73	16	26	4.2	0.0	280	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	539.84	6.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	536.86	5.8	69	1100	42.5	490	1500	6.80	170	44	85	6.6	<0.6	650	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630	58	140	13.0		840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6.4	<0.6	480	61	50	23.0	0.3		600	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290	47	19	7.7			350	<6	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94		526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330	46	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95		510.49						830	6.90	97	25	36	5.3	<0.6	390	67	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330	67	35	42	0.29		580	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96		523.41																														
4928A	11-Sep-96		NM																														
4928A	31-Oct-96		516.47	7.40	65.4	995	130	348	960	7.10	120	30	47	6.4	<10	360	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97		511.81	7.20	65.2	830	50	420	850	6.90	100	27	37	5.6	0	390	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	26-Aug-97		504.90	7.00	66.9	825	34	372	890	6.60	110	27	41	5.5	0	400	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98		492.23	7.30	68.3	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98		507.01	7.17	65.9	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99		507.59	7.60	70.2	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324	68	33	38	0.3		565	<6	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99		493.23	7.46	66.9	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00		476.16	7.25	64.0	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00		481.63	6.76	67.1	600	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01		484.40	7.44	65.1	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01		485.40	8.10	68.2	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02		485.26	7.65	65.5	766	26	363	761	7.20	88.6	24.1	34.5	15.8	<1	282	73	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02		474.58	6.90	65.3	722	32	336	824	7.13	99.4	26.1	35.3	5.5	<1	280	75	33	53.1	0.4	348	476	5.4'	0.6	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03		473.67	7.31	67.1	664	33	348	720	7.26	81.4	21.1	29.5	4.59	<1	284	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014'	0.215	<50	<10	AETL
4928A	10-Dec-03		449.97	7.40	66.8	1300	35	530	1120	7.06	147	35.7	38.7	5.37	<1	484	60.4	63	27.9	0.512	575	685	13.7	0.4'	4.5	<0.25	<0.25	<5	12'	<0.02	<15	<10	AETL
4928A	08-Jan-04		477.78																														
4928A	08-Jun-04		450.35	7.31	68.0	1070	43	380	1120	6.99	135	33.0	37.6	5.74	<1	456	68.4	51.0	19.4	0.520	528	705	<5	0.7	5.1	<0.25	<0.25	<5	15'	<0.02	<15	<10	AETL
4928A	17-Dec-04		450.58																														
4928A	09-Jun-05		488.20	7.34	67.8	721	36	300	676	7.04	79.3	20.3	30.4	4.84	<1	248	74.0	23.9	9.96	0.174	288	408	<5	0.7	4.58	<0.25	<0.25	<5	<10	0.089	<15	<10	AETL
4928A	15-Dec-05		499.68	6.63	63.9	598	46	300	698	6.53	116.0	28.6	35.9	5.77	<1	330	74.8	37.9	20.36	0.195	424	616	<5	0.8	5.00	<0.25	<0.25	<5	<10	0.031	<15	<10	AETL

003014

CONFIDENTIAL

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 38000854.10000

POINT	DATE	WATER LEVEL REF PT.	WATER LEVEL W S E	FIELD MEASUREMENTS pH	T(f) °C	fEC µmhos/cm	CO2 ppm	Alk ppm	GENERAL MINERALS EC µmhos/cm	LpH pH	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	CO3 mg/L	HCO3 mg/L	GENERAL MINERALS (cont.) SO4 mg/L	Cl mg/L	NO3 mg/L	B mg/L	HARD mg/L	TDS mg/L	COD mg/L	ORGANICS TCE µg/L	PCE µg/L	BENZENE µg/L	VC µg/L	METALS Cd µg/L	Cr µg/L	Fe mg/L	Pb µg/L	Ni µg/L	LAB SOURCE
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470	60	40	19.0			620			4				<0.08			B&C
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	<1	<1				<0.09			B&C
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	<1	<1				<0.06			B&C
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390	56	37	12.0	0.4		530	<0.05						<0.046			B&C
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<1	3				<0.042			B&C
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<1	<1				<0.063			B&C
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341	30	20	7.0			320		<1	1				<0.2			B&C
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	<1	3				<0.2			B&C
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280	60	35	15.0	0.3		440	<0.05	<1	<1				0.29	<20		B&C
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340	51	18	5.3	0.5		420	0.10	<1	2			<10	<0.03	<20	<0.06	B&C
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340	54	18	6.6	0.4		410	0.08	<1	2			<10	0.88	<10	<0.04	B&C
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<1	4			<20	<0.02	<20	<0.04	B&C
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370	50	21	6.4	0.25		430	<0.05	<1	<1			<20	0.20	<10	<0.04	B&C
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356	52	20	2.9	0.18		400	7.0	<1	3			<20	5.70	13	<0.004	B&C
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350	48	18	2.4	0.19		410	6.0	<1	4			<1	<0.02	<2	<0.04	B&C
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380	53	18	3.2	0.16		430	<3	<1	4			<1	0.04	<2	<0.04	B&C
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02		400	<5	1	5			<1	2.20	3	<0.04	B&C
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230	24	19	<0.2			190	<6	0.90	<0.5			5	0.82	49	<0.04	B&C
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370	46	22	0.78			410	7.2	<1	1.7			1	14	24	<0.04	B&C
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370	46	17	3.4			390	<6	<1	2.0			<1	17	18	<0.04	B&C
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370	120	20	2.7			400	<6	<0.5	1.4			<1	82	3	<0.04	B&C
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25		440		<0.5	<0.5			<1	87	13	<0.04	B&C
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500	48	35	0.31	0.27		600		1.1	2.7			<3	7.9	17	<0.005	B&C
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05		560	6.9	2.7	<0.5			<5	<10	2.4	16	<0.04	B&C
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690	78	77	5.7	0.53		880	32.0	1.3	2.6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96		525.61																														
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630	50	44	27	0.31		760		1.4	5.6			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502	40	56	<0.1	0.5		802	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438	57	39	6.2	0.3		618	<6	<0.5	1.6			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3		789	<6.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3		754	<6.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00		DRY																														
4928B	09-Oct-00		DRY																														
4928B	29-Mar-01		DRY																														
4928B	25-Sep-01		DRY																														
4928B	05-Jun-02		DRY																														
4928B	27-Nov-02		DRY																														
4928B	30-May-03		DRY																														
4928B	10-Dec-03		DRY																														
4928B	08-Jun-04		DRY																														
4928B	17-Dec-04		DRY																														
4928B	09-Jun-05		DRY																														
4928B	15-Dec-05		DRY																														
4928C	20-Feb-95	823.37	512.30																														
4928C	24-Aug-95		526.72																														
4928C	23-Feb-96		528.98																														
4928C	23-Aug-96		526.79																														
4928C	14-Feb-97		514.27																														
4928C	26-Aug-97		507.48																														
4928C	12-Mar-98		493.57																														
4928C	21-Sep-98		510.16																														
4928C	30-Mar-99		510.22																														
4928C	25-Aug-99		494.57																														
4928C	10-Mar-00		476.92																														
4928C	09-Oct-00		483.18																														
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1560	7.00	151	39.8	98.3	8.41	<1	670	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02		475.52																														
4928C	30-May-03		475.27																														
4928C	10-Dec-03		487.65	7.45	67.5	680	30	340	756	7.24	88.6	22.3	31.4	4.47	<1	290	62.8	31	21.7	0.285	332	456	12.4	0.8	6.4	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	08-Jan-04		479.70																														
4928C	08-Jun-04		487.78	7.47	67.1	598	40	280	702	7.14	79.3	20.2	28.8	4.74	<1	272	62.4	24.0	30.2	0.283	302	420	7.78J	0.8	4.8	<0.25	<0.25	<5	14J	0.043J	<15	<10	AETL
4928C	24-Jun-04		487.78																														
4928C	17-Dec-04		486.57	7.14	66.9	1487	40	380	1,440	6.96	173	42.6	41.9	6.62	<1	600	28.1	48.7	12.6	0.438	680	900	<5.0	<0.25	6.5	<0.25	<0.25	<5	<10	<0.02	<50	<10	AETL
4928C	09-Jun-05		493.62	7.22	75.5	1160	66	250	1,065	6.95	134	32.7	40.1	6.19	<1	388	75.9	56.2	24.3	0.240	474	656	<5.0	0.67	5.25	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	15-Dec-05		504.87	6.44	65.1	842	60	300	950	6.83	76.3	19.6	27.7	5.34	<1	220	74.2	24.4	16.10	0.195	294	452	<5	0.7	4.90	<0.25	<0.25	<5	<10	0.023	<15	<10	AETL

Nitrate concentrations presented as NO3

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQ

SAMPLE COLLECTION RECORDS

...S WATER QUALITY — SAMPLE COLLECTION RECORD

LOCATION		WELL NUMBER (SITE ID): 4928 A
PROJECT NAME: G.W. Monitoring - Stead Manon Landfill		DATE: 12-15-05
PROJECT NUMBER:		SAMPLER(S): Mike Mahon
LOCATION: Stead Manon Landfill, Sun Valley, CA.		WEATHER: Cloudy ~ 60°F

INSTRUMENTATION	PARAMETERS INSTRUMENTS CALIBRATION COMPLETED DATE: TIME:
pH METER (Brand, Model, S/N): SEE SHEET 4928 C	WATER LEVEL METER (Brand, S/N):
pH CALIBRATION READINGAT: 4.0	7.0 10.0
CONDUCTIVITY METER (Brand, Model, S/N):	CALIBRATION SOLUTION USED: uS/cm

WELL INFORMATION	DEPTH TO WATER (DTW): 304.11 feet BMP DATE: 12-15-05 TIME: 10:18	
TAL DEPTH OF WELL (TD): Feet BMP	TD – DTW: feet	CASING CAPACITY: gal/ft
SCREENED INTERVAL: From To Feet BMP	CASING VOLUME (CV) = (D/24)² (3.14) (7.48) (TD – DTW) =	gal
CASING TYPE: Steel	CASING DIAMETER: 9 Inches	3 CV : gal / 3 CV PURGE TIME: min

WELL EVACUATION — EQUIPMENT: — PUMP SET AT: feet

CLOCK TIME	ELAPSED TIME (min)	PUMPING RATE (gpm)	PURGED VOLUME (gal)	DTW (feet)	pH	SC (uS/cm)	TEMP (circle one) °C (F)	COLOR	CLARITY	ODOR	COMMENTS
10:20	0	15	0		---	---	---	---	---	---	START PUMP
10:25	5	15	75		6.86	8.34x100	64.1	Clear	Clear	None	
10:30	10	15	150		6.65	6.15x100	64.2	Clear	Clear	None	
10:35	15	15	225		6.68	5.98x100	63.9	Clear	Clear	None	
	Ca = 46 ppm										
	Alkalinity = 300 ppm										

SAMPLE COLLECTION	DATE: 12-15-05 TIME: 10:40 VOLUME PURGED: 225 gal	
REQUESTED ANALYSES: VOC's, General Minerals, COD, Cl, Cr, Pb, Ni, Boron		
CONTAINER TYPES: 2 1L Poly, 2 40 ml VOAs		
FILTERED?: ☐ Yes ☒ No	FILTER EQUIPMENT: N/A	SAMPLE TYPE: ☒ Primary ☐ Duplicate
COMMENTS: Purged well for 15 Minutes as per Client Direction		☐ Equipment Blank ☐ Field Blank
SAMPLER SIGNATURE: Mike Mahon	DATE: 12-15-05	☐ Split Sample ☐ MS/MSD

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URS WATER QUALITY

SAMPLE COLLECTION RECORD

LOCATION	
PROJECT NAME: G.W. Monitoring - Strathern Landfill	WELL NUMBER (SITE ID): 4928 C
PROJECT NUMBER:	DATE: 12-15-05
LOCATION: Strathern Landfill Sun Valley Ca.	SAMPLER(S): Mike Makeron
	WEATHER: Cloudy ~ 55°F

INSTRUMENTATION	PARAMETERS INSTRUMENTS CALIBRATION COMPLETED DATE: 12-15-05 TIME: 0900
pH METER (Brand, Model, S/N): Hydac	WATER LEVEL METER (Brand, S/N): Powers Well Sounder
pH CALIBRATION READINGAT: 4.0	7.0 7.03 10.0 10.02
CONDUCTIVITY METER (Brand, Model, S/N): Hydac	CALIBRATION SOLUTION USED: 1413 uS/cm

WELL INFORMATION	DEPTH TO WATER (DTW): 318.50' feet BMP DATE: 12-15-05 TIME: 09:30
TOTAL DEPTH OF WELL (TD): Feet BMP	TD – DTW: feet CASING CAPACITY: gal/ft
SCREENED INTERVAL: From To Feet BMP	CASING VOLUME (CV) = $(D/24)^2$ (3.14) (7.48) (TD – DTW) = gal
CASING TYPE: Steel CASING DIAMETER: 9 Inches	3 CV : gal 3 CV PURGE TIME: min

WELL EVACUATION	EQUIPMENT: Submersible Pump	PUMP SET AT: feet

CLOCK TIME	ELAPSED TIME (min)	PUMPING RATE (gpm)	PURGED VOLUME (gal)	DTW (feet)	pH	SC (uS/cm)	TEMP (circle one) °C °F	COLOR	CLARITY	ODOR	COMMENTS
0930	0	10	0		----------	----------	----------	----------	----------	----------	START PUMP
0935	5	10	50		6.80	8.53 x 100	64.8	Clear	Clear	None	
0940	10	10	100		6.54	8.22 x 100	65.5	Clear	Clear	None	
0945	15	10	150		6.44	8.42 x 100	65.1	Clear	Clear	None	
	CO_2 = 60 ppm										
	Alkalinity = 300 ppm										

SAMPLE COLLECTION	DATE: 12-15-05 TIME: 09:45 VOLUME PURGED: 150 gal
REQUESTED ANALYSES: VOC's General Minerals COD Cd, Cr, Pb, Ni, Boron	
CONTAINER TYPES: 2 1L Poly 2 40 ml VOAs	
FILTERED?: ☐ Yes ☒ No	FILTER EQUIPMENT: N/A
COMMENTS: Purged Well For 15 Minutes as Per Client Direction and Historical Technique	SAMPLE TYPE: ☒ Primary ☐ Duplicate ☐ Equipment Blank ☐ Field Blank ☐ Split Sample ☐ MS/MSD
SAMPLER SIGNATURE: [signature] DATE: 12-15-05	

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LABORATORY ANALYTICAL REPORT

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American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

URS Corporation
10723 Bell Court
Rancho Cucamonga, CA 91730-

Telephone: (909)980-4000
Attention: Bill O'Braitis

Number of Pages	12
Date Received	12/15/2005
Date Reported	12/27/2005

Job Number	Order Date	Client
35659	12/15/2005	URS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring
Site: 8230 Tujunga Avenue
Sun Valley, CA 91352

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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CHAIN OF CUSTODY RECORD

Nº 40474

COMPANY: URS Corporation
PROJECT MANAGER: Mike Makdisi
COMPANY ADDRESS: 10723 Bell Court
PHONE: 909 980 4000
FAX: 909 980 1399
PROJECT NAME: G.W. Monitoring - Strathorn Landfill
PROJECT #:
SITE NAME AND ADDRESS: 8230 Tujunga Avenue, Sun Valley, CA.
PO #:

AETL JOB No. 35659

Page 1 of 1

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	4928 C	35659.01	12.15.05	09:45	H_2O	4	HCL/VOA
2	4928 A	35659.02	12.15.05	10:40	H_2O	3	HCL/VOA
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

ANALYSIS REQUESTED

SAMPLE ID	VOCs	Gen Minerals	COD	Cd, Cr, Pb, Ni, Zn
4928 C	X	X	X	X
4928 A	X	X	X	X

TEST INSTRUCTIONS & COMMENTS

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	7	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N / (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

	1.	2.	3.
RELINQUISHED BY SAMPLER:	Signature: Mike Makdisi Printed Name: Mike Makdisi Date: 12-15-05 Time: 1230	Signature: Printed Name: Date: Time:	Signature: Printed Name: Date: Time:
RECEIVED BY:	Signature: Printed Name: Christine Norshadyan Date: 12/15/05 Time: 1230	Signature: Printed Name: Date: Time:	Signature: Printed Name: Date: Time:
			RECEIVED BY LABORATORY:

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

Ordered By

URS Corporation
10723 Bell Court
Rancho Cucamonga, CA 91730-

Telephone: (909)980-4000
Attn: Bill O'Braitis

Site

8230 Tujunga Avenue
Sun Valley, CA 91352

Page: 2

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Clien
35659	12/15/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121605

Our Lab I.D.			Method Blank	35659.01	35659.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				12/15/2005	12/15/2005		
Date Prepared			12/16/2005	12/16/2005	12/16/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			12/16/2005	12/16/2005	12/16/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Acetone	0.5	1.0	ND	ND	ND		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
2-Butanone (MEK)	0.5	1.0	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon Disulfide	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.25	0.50	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.25	0.50	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	4.8	ND		

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ANALYTICAL RESULTS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121605

Our Lab I.D.			Method Blank	35659.01	35659.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				12/15/2005	12/15/2005		
Date Prepared			12/16/2005	12/16/2005	12/16/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			12/16/2005	12/16/2005	12/16/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethane	0.25	0.50	ND	2.9	1.4		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	1.9	ND		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.7	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
2-Hexanone	0.5	1.0	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND	ND		
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.25	0.50	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	5.0	4.9		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.8	0.7		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.25	0.50	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Clien
35659	12/15/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121605

Our Lab I.D.			Method Blank	**35659.01**	**35659.02**		
Client Sample I.D.				4928C	4928A		
Date Sampled				12/15/2005	12/15/2005		
Date Prepared			12/16/2005	12/16/2005	12/16/2005		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			12/16/2005	12/16/2005	12/16/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl Acetate	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-Xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		
Total trihalomethane compounds	0.25	0.50	ND	ND	ND		
Our Lab I.D.				**35659.01**	**35659.02**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
Bromofluorobenzene	75-125		104	100	99		
1,2-Dichlorobenzene	75-125		104	102	101		

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Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: GEN.-MINERALS, General Minerals

QC Batch No: 121905

Our Lab I.D.			Method Blank	35659.01	35659.02		
Client Sample I.D.				4928C	4928A		
Date Sampled				12/15/2005	12/15/2005		
Date Prepared			12/19/2005	12/19/2005	12/19/2005		
Preparation Method			VARIOUS	VARIOUS	VARIOUS		
Date Analyzed			12/19/2005	12/19/2005	12/19/2005		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bicarbonate (as CaCO3)	1	2	ND	330	220		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	330	220		
Anions Total (meq/L)	0.01	0.01	NA	9.57	6.91		
Cations Total (meq/L)	0.01	0.01	NA	9.89	6.79		
Ion Balance (percent difference)	0.01	0.01	NA	1.64	0.875		
Chloride (Cl), Total	0.5	1.0	ND	37.9	24.4		
Conductivity (umhos/cm @77F)	5	10	ND	950	698		
Fluoride, Total	0.1	0.2	ND	0.3	0.4		
Hardness (Ca,Mg) as CaCO3	1	2	ND	424	294		
Nitrate as Nitrogen	0.05	0.10	ND	4.6	3.65		
Nitrite as Nitrogen	0.01	0.02	ND	ND	ND		
pH (pH units)	0.01	0.01	NA	6.83	6.53		
Sulfate	5	10	ND	74.8	74.2		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	616	452		
Aluminum	0.05	0.10	ND	ND	ND		
Calcium	0.05	0.10	ND	116	76.3		
Copper	0.01	0.02	ND	ND	ND		
Iron	0.01	0.02	ND	0.031	0.023		
Magnesium	0.05	0.10	ND	28.6	19.6		
Manganese	0.01	0.01	ND	ND	ND		
Potassium	0.10	0.20	ND	5.77	5.34		
Sodium	0.10	0.50	ND	35.9	27.7		
Zinc	0.01	0.02	ND	0.571	0.173		

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Page 6
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Our Lab I.D.							N/A	35659.01	35659.02
Client Sample I.D.							Method Blank	4928C	4928A
Date Sampled							12/15/2005	12/15/2005	12/15/2005
Matrix							Aqueous	Aqueous	Aqueous
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	**Results**
Boron	1	200.7	mg/L	0.050	0.100	12/20/2005	ND	0.195	0.172
Cadmium	1	200.7	mg/L	0.005	0.050	12/20/2005	ND	ND	ND
Chromium	1	200.7	mg/L	0.01	0.05	12/20/2005	ND	ND	ND
Lead	1	200.7	mg/L	0.015	0.100	12/20/2005	ND	ND	ND
Nickel	1	200.7	mg/L	0.01	0.05	12/20/2005	ND	ND	ND
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	12/19/2005	ND	ND	ND

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Page: 7
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: 200.7, Boron by ICP

QUALITY CONTROL REPORT

QC Batch No: 121505-2 Sample Spiked: 35628.01 QC Prepared: 12/15/2005 QC Analyzed: 12/20/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.611	1.00	1.54	93	1.00	1.54	93	<1	80-120	<20

QC Batch No: 121505-2 Sample Spiked: 35628.01 QC Prepared: 12/15/2005 QC Analyzed: 12/20/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Boron	1.00	0.91	91	80-120						

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Page: 8
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch No: 121505 Sample Spiked: 35611.01 QC Prepared: 12/15/2005 QC Analyzed: 12/20/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	ND	1.00	0.91	91	1.00	0.91	91	<1	80-120	<15
Chromium	0.009	1.00	0.95	94	1.00	0.95	94	<1	80-120	<15
Lead	0.004	1.00	0.89	89	1.00	0.88	88	1.1	80-120	<15
Nickel	ND	1.00	0.90	90	1.00	0.91	91	1.1	80-120	<15

QC Batch No: 121505 Sample Spiked: 35611.01 QC Prepared: 12/15/2005 QC Analyzed: 12/20/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	1.01	101	80-120
Chromium	1.00	0.99	99	80-120
Lead	1.00	0.98	98	80-120
Nickel	1.00	1.01	101	80-120

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Page: 9
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 121905 Sample Spiked: 35659.01 QC Prepared: 12/19/2005 QC Analyzed: 12/19/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	ND	50.00	50.00	100	50.00	50.00	100	<1	80-120	<15

QC Batch No: 121905 Sample Spiked: 35659.01 QC Prepared: 12/19/2005 QC Analyzed: 12/19/2005 Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	51.00	102	80-120		

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Page: 10
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 121605 Sample Spiked: 121605 QC Prepared: 12/16/2005 QC Analyzed: 12/16/2005 Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	50.00	50.00	100	50.00	52.00	104	3.9	75-125	<20
Chlorobenzene	50.00	47.00	94	50.00	49.50	99	5.2	75-125	<20
Chloroform (Trichloromethane)	50.00	51.50	103	50.00	51.50	103	<1	75-125	<20
1,1-Dichloroethene	50.00	49.50	99	50.00	52.00	104	4.9	75-125	<20
Ethylbenzene	50.00	48.50	97	50.00	48.50	97	<1	75-125	<20
Methyl-tert-butyl ether (MTBE)	50.00	49.50	99	50.00	52.50	105	5.9	75-125	<20
Toluene (Methyl benzene)	50.00	47.50	95	50.00	49.50	99	4.1	75-125	<20
1,1,1-Trichloroethane	50.00	49.50	99	50.00	49.50	99	<1	75-125	<20
Trichloroethene	50.00	51.00	102	50.00	50.50	101	<1	75-125	<20
o-Xylene	50.00	47.50	95	50.00	47.50	95	<1	75-125	<20
m,p-Xylenes	100.00	96.00	96	100.00	96.00	96	<1	75-125	<20

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Page: **11**
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submitted	Client
35659	12/15/2005	URS

Method: GEN.-MINERALS, General Minerals

QUALITY CONTROL REPORT

QC Batch No: 121905 Sample Spiked: 121905 QC Prepared: 12/19/2005 QC Analyzed: 12/19/2005 Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	330	20.00	350.00	100	20.00	350.00	100	<1	80-120	<15
Total Alkalinity	330	20.00	350.00	100	20.00	350.00	100	<1	80-120	<15
Chloride (Cl), Total	452	20.00	473.20	106	20.00	473.20	106	<1	80-120	<15
Fluoride, Total	0.7	2.00	2.60	95	2.00	2.66	98	3.1	80-120	<15
Hardness (Ca,Mg) as CaCO3	424	20.00	444.00	100	20.00	444.00	100	<1	80-120	<15
Nitrate as Nitrogen	ND	0.50	0.53	106	0.50	0.53	106	<1	80-120	<15
Nitrite as Nitrogen	ND	0.20	0.20	101	0.20	0.21	103	2.0	80-120	<15
Sulfate	89.9	20.00	110.10	101	20.00	110.50	103	2.0	80-120	<15
Surfactants (MBAS)	ND	0.20	0.21	105	0.20	0.21	107	1.9	80-120	<15
Aluminum	0.021	1.00	1.06	104	1.00	1.09	107	2.8	80-120	<15
Calcium	32.2	50.00	85.70	107	50.00	86.70	109	1.9	80-120	<15
Copper	0.021	1.00	0.99	97	1.00	1.00	98	1.0	80-120	<15
Iron	0.032	1.00	1.05	102	1.00	1.09	106	3.8	80-120	<15
Magnesium	19.5	50.00	73.50	108	50.00	74.50	110	1.8	80-120	<15
Manganese	0.002	1.00	0.95	95	1.00	0.96	96	1.0	80-120	<15
Potassium	1.675	60.00	64.08	104	60.00	64.08	104	<1	80-120	<15
Sodium	240	50.00	293.00	106	50.00	295.50	111	4.6	80-120	<15
Zinc	0.061	1.00	1.01	95	1.00	1.01	95	<1	80-120	<15

QC Batch No: 121905 Sample Spiked: 121905 QC Prepared: 12/19/2005 QC Analyzed: 12/19/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Chloride (Cl), Total	20.00	18.60	93	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Fluoride, Total	2.00	1.96	98	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
Nitrate as Nitrogen	0.50	0.53	106	80-120
Nitrite as Nitrogen	0.20	0.20	102	80-120

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ANALYTICAL RESULTS

Page: 12
Project ID: STRATHERN LANDFILL
Project Name: Groundwater Monitoring

AETL Job Number	Submittd	Client
35659	12/15/2005	URS

Method: GEN.-MINERALS, General Minerals

QC Batch No: 121905 Sample Spiked: 121905 QC Prepared: 12/19/2005 QC Analyzed: 12/19/2005 Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	20.40	102	80-120						
Surfactants (MBAS)	0.20	0.21	103	80-120						
Total Dissolved Solids	100.00	96.00	96	80-120						
Aluminum	1.00	1.05	105	80-120						
Calcium	50.00	51.00	102	80-120						
Copper	1.00	1.00	100	80-120						
Iron	1.00	1.04	104	80-120						
Magnesium	50.00	51.00	102	80-120						
Manganese	1.00	1.02	102	80-120						
Potassium	60.00	60.60	101	80-120						
Sodium	50.00	56.00	112	80-120						
Zinc	1.00	1.03	103	80-120						

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Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate

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Data Qualifiers and Descriptors

ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

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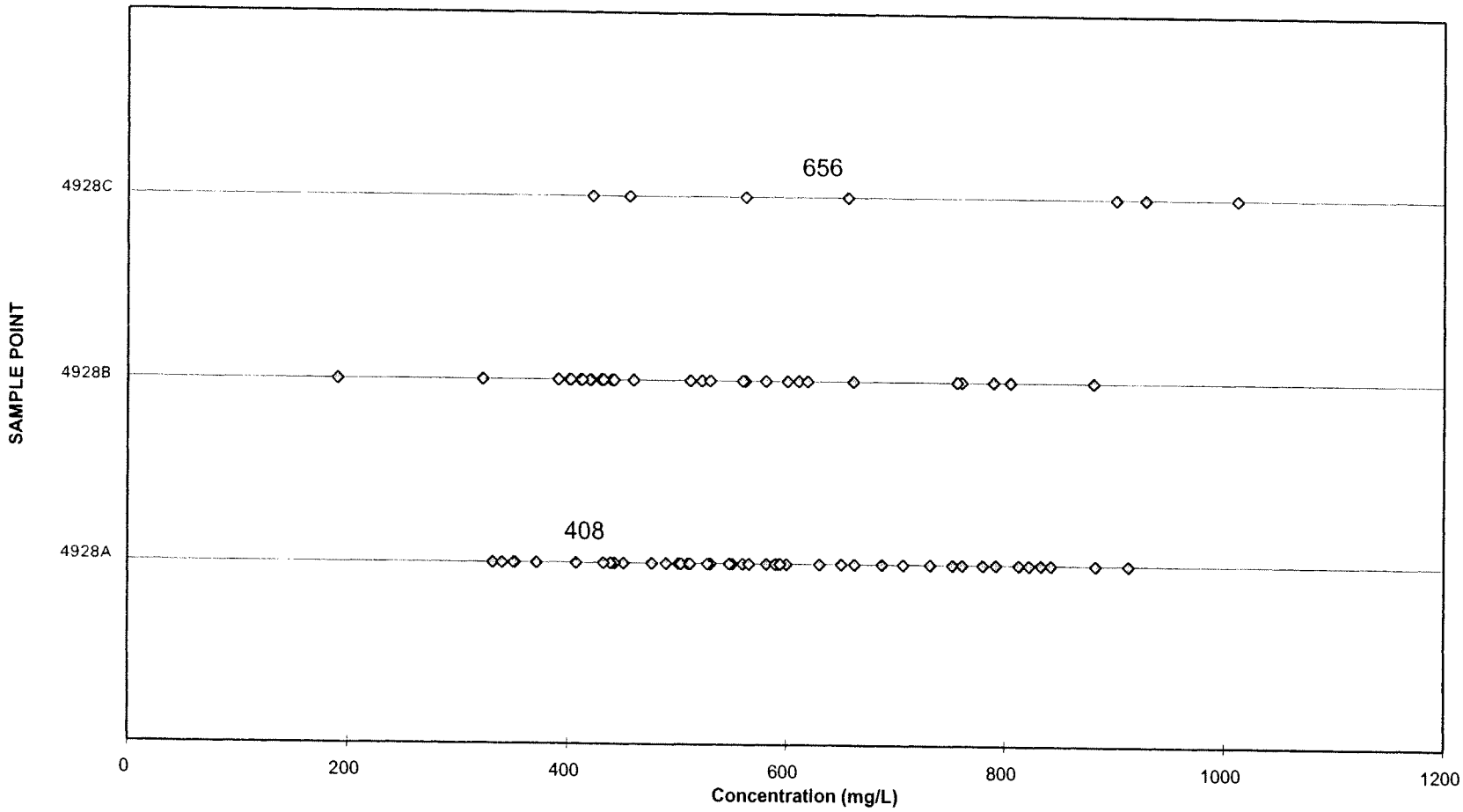
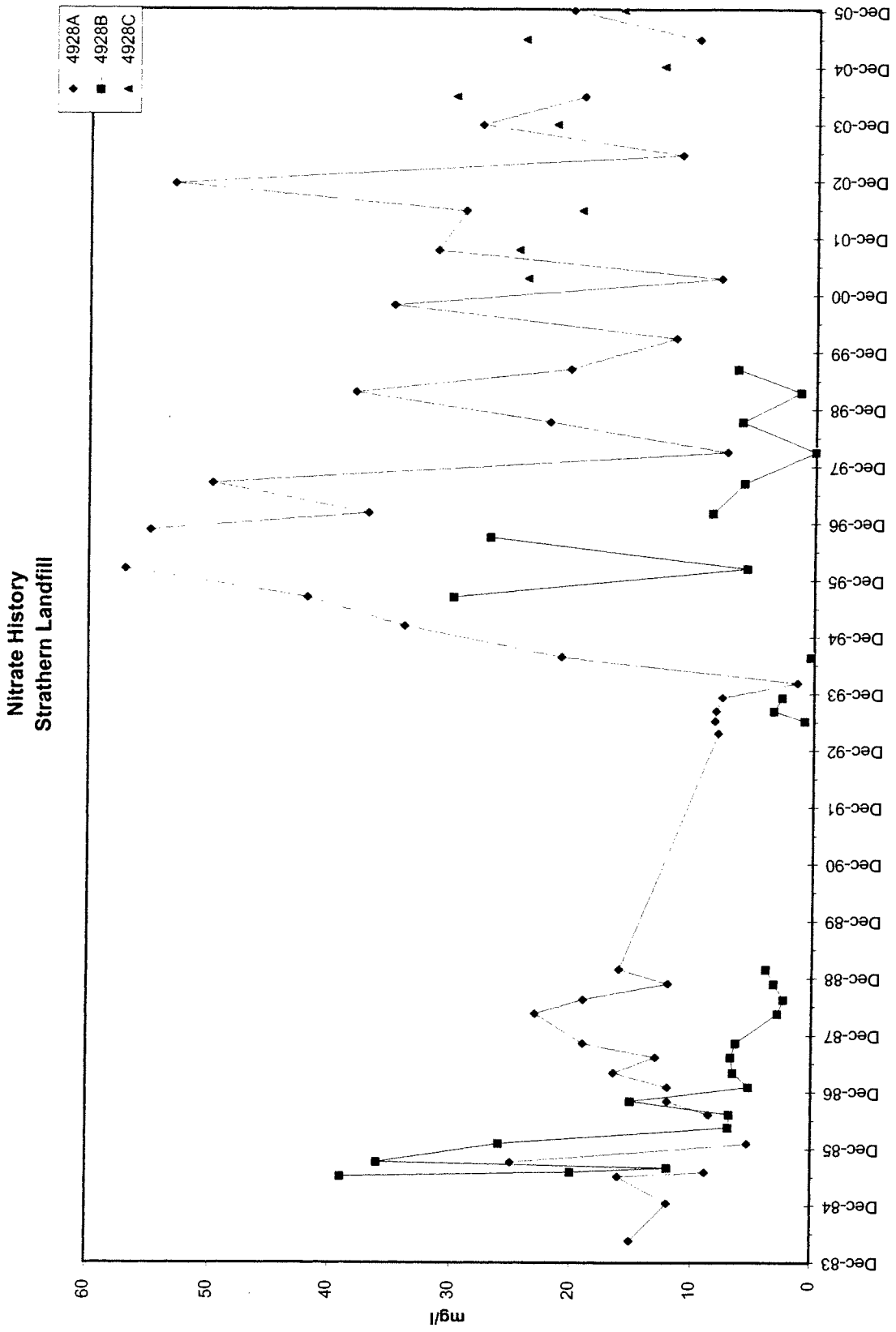
Total Dissolved Solids
Statistical Distribution




Nitrate History
Strathern Landfill
4928A
4928B
4928C
mg/l
0
10
20
30
40
50
60
Dec-83
Dec-84
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
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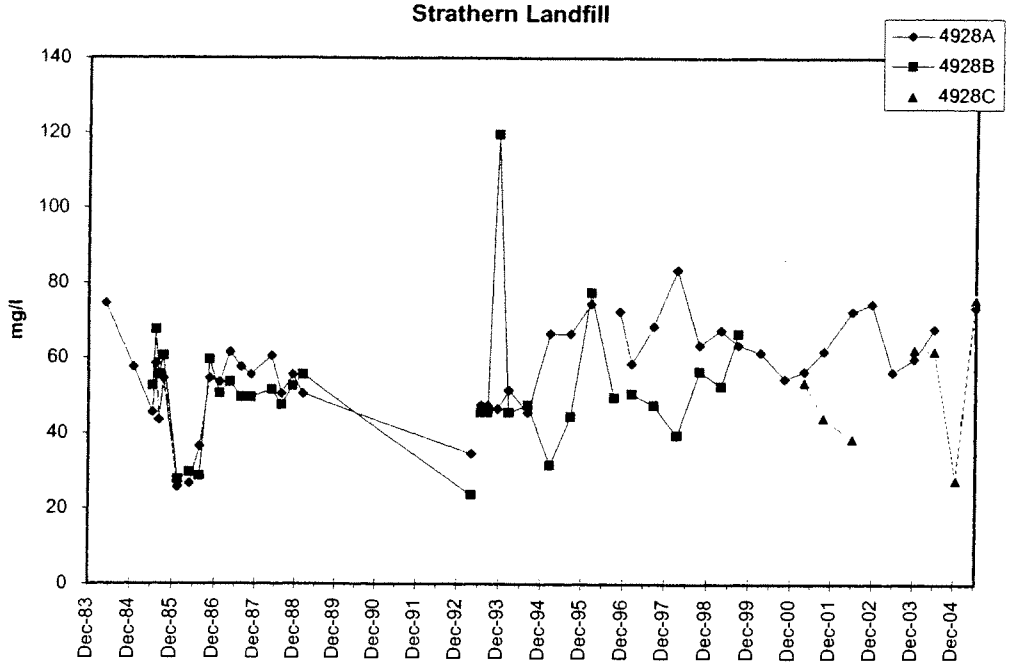
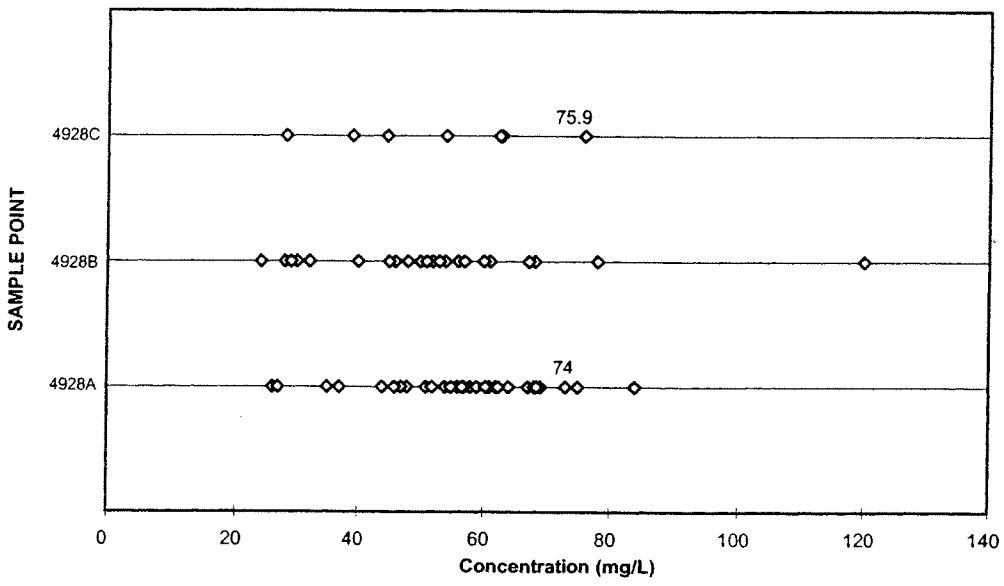
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05

Sulfate History
Strathern Landfill



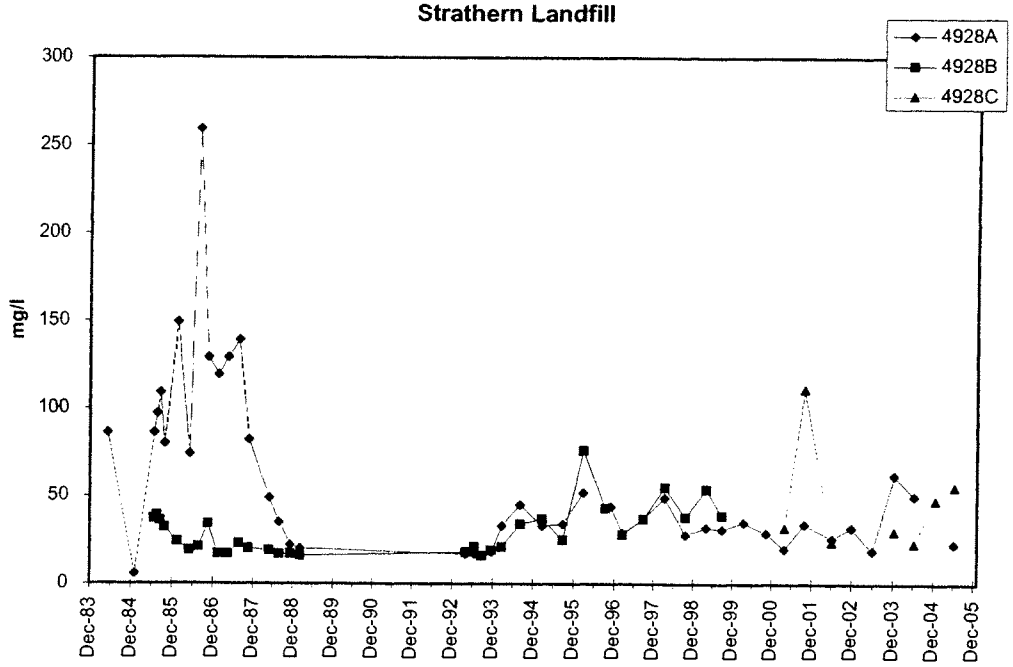
Sulfate
Statistical Distribution



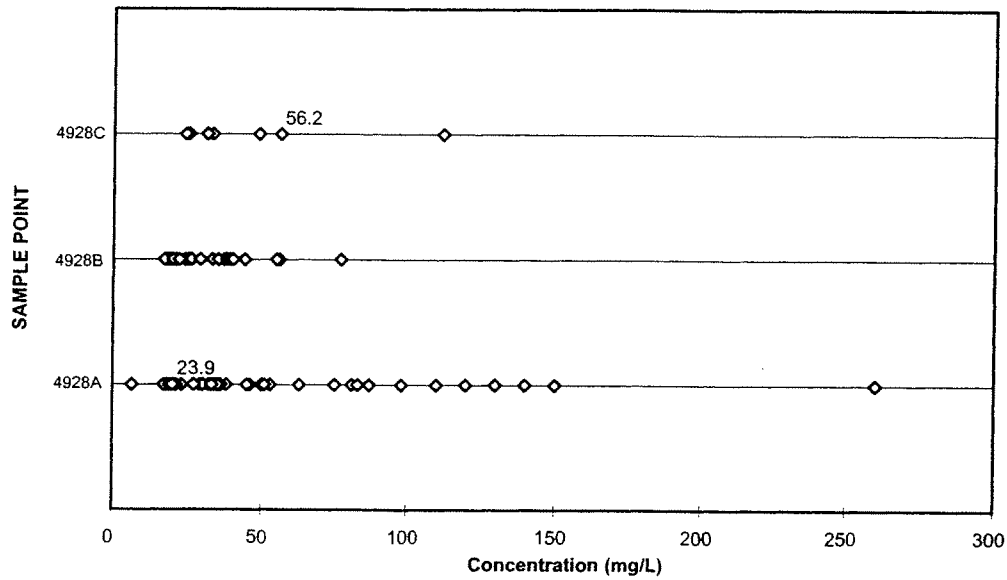
Data labels are for June 2005 sampling event.

URS

Chloride History
Strathern Landfill

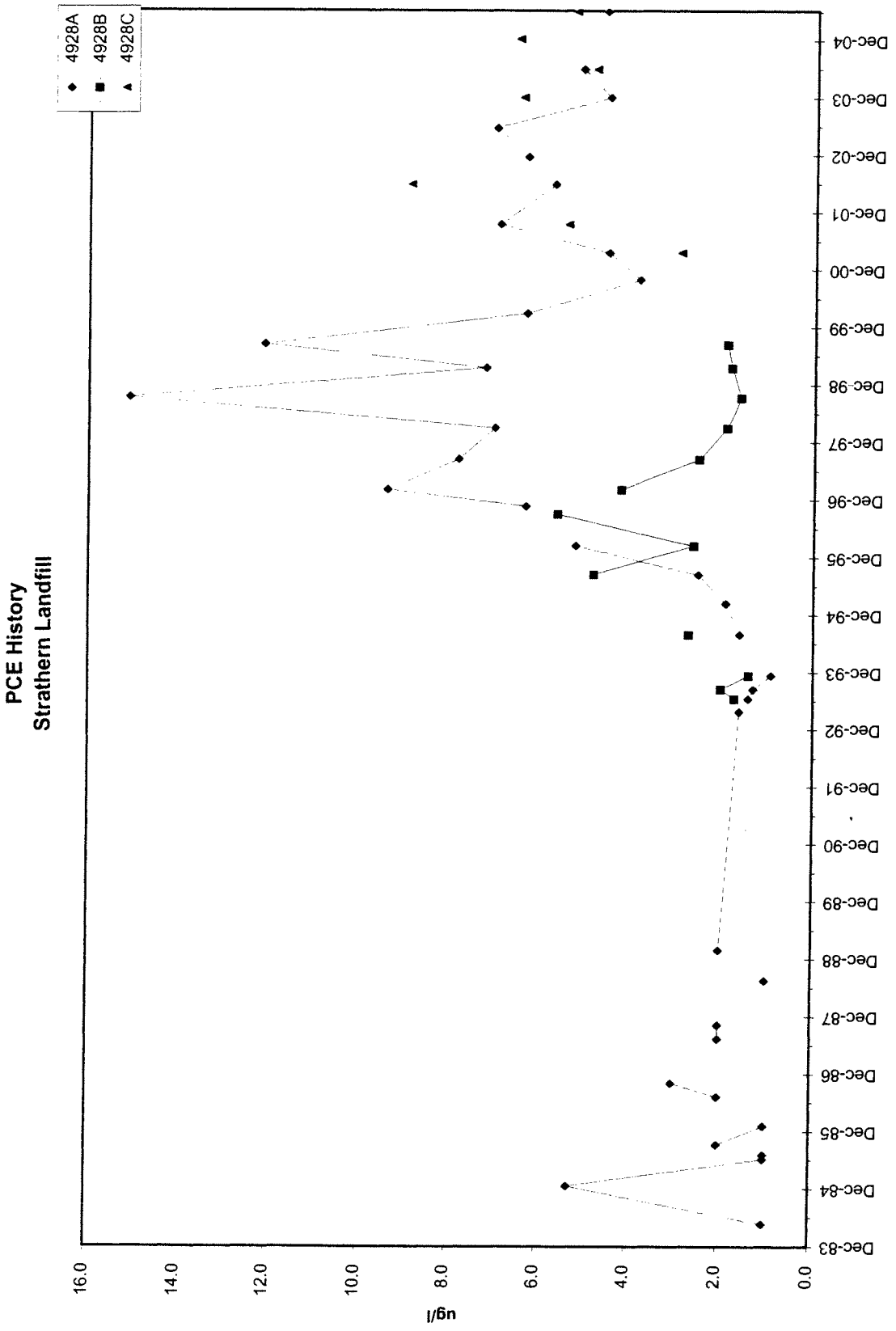


Chloride
Statistical Distribution



Data labels are for June 2005 sampling event.

URS


PCE History
Strathern Landfill
4928A
4928B
4928C
ug/l
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Dec-83
Dec-84
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04

CONFIDENTIAL

SECOND QUARTER 2003 GROUNDWATER MONITORING AND WASTE DISPOSAL REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Los Alamitos, California

Prepared by

MACTEC Engineering and Consulting
Los Angeles, California

July 30, 2003

MACTEC Project 70111-2-0346

MACTEC

003040

MACTEC

July 30, 2003

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Second Quarter 2003**
Groundwater Monitoring and Waste Disposal Report
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
MACTEC Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the second quarter 2003 groundwater monitoring and waste disposal activities at the Los Angeles By-Products Company's Strathern Landfill. MACTEC Engineering and Consulting (MACTEC) monitors the groundwater levels and groundwater quality at Strathern Landfill. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, Monitoring and Reporting Program (MRP) 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting on waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring was done during the first and third quarters by MACTEC, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, on October 30, 2001, Mr. Dana Cole of the Regional Water Quality Control Board (RWQCB) requested that monitoring be done during the second and fourth quarters, and that reporting of waste disposal quantities be combined with the groundwater monitoring report. This monitoring report contains the results of the second quarter 2003 groundwater-monitoring and waste disposal.

Groundwater levels in the area have decreased since the fourth quarter 2002. Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B has been dry since the first quarter of 2000. Therefore on March 23, 2001, we requested and received

permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Groundwater measurements during the second quarter 2003, show that monitoring well 4928B continues to be dry. Due to low regional groundwater levels during the second quarter, the water level in well 4928C was too low to pump water to the surface for sampling. Los Angeles By-Products plans to redevelop the well and lower the pump for future sampling.

The analytical results of second quarter 2003 monitoring show that groundwater quality at 4928A is similar to historical results. During the second quarter 2003, inorganic groundwater quality met California Drinking Water Standards for the parameters measured. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) in well 4928A. However, the site receives only solid inert waste from a small group of disposers, therefore waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

MACTEC measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

MACTEC prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

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SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting on waste disposal activities and semi-annual monitoring of groundwater quality. This report covers these requirements for the second quarter of 2003. MACTEC collected groundwater samples in May 2003 and prepared this report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. The site's upgradient well 4928B has been dry since the first quarter of 2000. We received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Groundwater measurements during the second quarter 2003, show that monitoring well 4928B continues to be dry. Due to low regional groundwater levels during the second quarter, the water level in well 4928C was too low to pump water to the surface for sampling. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

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RESULTS

This section presents the monitoring results including waste disposal, groundwater levels, and groundwater quality.

WASTE DISPOSAL

Strathern Landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. During the second quarter 2003, Los Angeles By-Products received about 122,669 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of wastes deposited during the first quarter. Figure 3 shows the approximate location of waste disposal during the second quarter of 2003. The remaining capacity of the Strathern Landfill is about 2.7 million tons. The estimated remaining life of the site is 7.8 years.

The waste tonnage recorded in this report has been attested to, and certified by the President of Los Angeles By-Products Company. The certification of deposited waste is attached to the end of this report.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the southwest during September, we used K in both the north-south, and east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.001111 ft/ft. Groundwater flow for May 2003 was 0.67 ft/day or 244 ft/year to the south-southwest. Figure 2 shows groundwater contours, flow direction and velocity at the site for the second quarter 2003.

GROUNDWATER LEVELS

MACTEC measured groundwater levels in May 2003. Groundwater levels in the area fell an average about 4.8 feet between the fourth quarter 2002 and second quarter 2003. The groundwater level in

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well 4928A fell 0.91 foot while the groundwater level in well 4928C fell 0.25 foot. Well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. Groundwater levels remain near the site's historic low groundwater levels. This is probably related to the past few dry summer seasons and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 11,817 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2002 through May 2003. Figure 4 contains the hydrographs for the three on-site wells. The groundwater database in Appendix A contains the water level data.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A during the second quarter in May 2003. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, iron, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from AETL of groundwater samples collected in May 2003. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses for well 4928A indicated that during second quarter 2003, the groundwater met California Drinking Water Standards for the inorganic parameters tested. Table 3 shows selected results for the second quarter 2003 compared to California Drinking Water Standards.

Organics

Downgradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, cis-1,2-DCE, and dichlorodifluoromethane. Levels were below California Drinking Water limits, except for PCE. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Groundwater levels in the area fell an average about 4.8 feet between the fourth quarter 2002 and second quarter 2003. Groundwater levels remain near the site's historic low. Due to an overall decrease in regional groundwater levels over the past two years, upgradient well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. This may be related to the past few dry summer seasons and minimal groundwater recharge. Inorganic groundwater quality meets California Drinking Water Standards for the parameters measured. Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE. There does not appear to be an association between landfill operations and changes in groundwater quality. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for leachate from the landfill continues to be low. MACTEC will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Kathy Foley at (323) 889-5340.

Sincerely,

MACTEC Engineering and Consulting

Katherine V. Foley
Staff Geologist

Alex Lapostol
Principal Geologist

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(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Board's requirements.

I declare under penalty of perjury that the foregoing information regarding waste disposal is true and correct. Executed this 6TH day of AUGUST, 2003, at Los Alamitos, California.

LOS ANGELES BY-PRODUCTS COMPANY

VICE PRESIDENT

Mike McAllister
President

FOR

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Quantities of Sediments Deposited
Second Quarter 2003

Quarter	Month	Tons	Cubic Yards* (approximate)
2	April	37,541	30,033
	May	40,944	32,755
	June	44,184	35,347
TOTALS:		122,669	98,135

Prepared by: EA/7-23-03
Checked by:KVF/7-30-03

**1.25 tons per cubic yard*

Table 3: Site Water Quality vs. California Drinking Water Standards
Second Quarter 2003 Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source	
			4928A (downgradient)	4928C(upgradient)
			May 2003	May 2003
Field Measurements				
pH (pH units)	pH units	6—9	7.31	NS
Electrical Conductivity	µmhos/cm	900*	664	NS
Carbon Dioxide	ppm	—	33	NS
Alkalinity	ppm	—	348	NS
Inorganic				
Total Dissolved Solids (TDS)	mg/L	500*	432	NS
Chloride (Cl)	mg/L	250*	20.0	NS
Sulfate (SO_4)	mg/L	250*	56.8	NS
Nitrate (NO_3)	mg/L	45	11.3	NS
Boron (B)	mg/L	1**	0.270	NS
Chemical Oxygen Demand (COD)	mg/L	—	<5.0	NS
Bicarbonate (HCO3)	mg/L	—	284	NS
Carbonate (CO3)	mg/L	—	<1	NS
Nickel (Ni)	µg/L	100	<10	NS
Iron (Fe)	mg/L	0.3	0.215	NS
Cadmium (Cd)	µg/L	5	<10	NS
Chromium (Cr)	µg/L	50	14[J]	NS
Lead (Pb)	µg/L	15**	<50	NS
Organic				
Trichloroethylene (TCE)	µg/L	5	0.7	NS
Tetrachloroethylene (PCE)	µg/L	5	7.0	NS
Benzene	µg/L	1	<0.25	NS
Vinyl Chloride (VC)	µg/L	0.5	<0.25	NS

Prepared/Date: EA/ 7-24-03
Checked/Date: KVF/ 7-30-03

1 – Source: CCR, Title 22, Division 4, Chapter 15

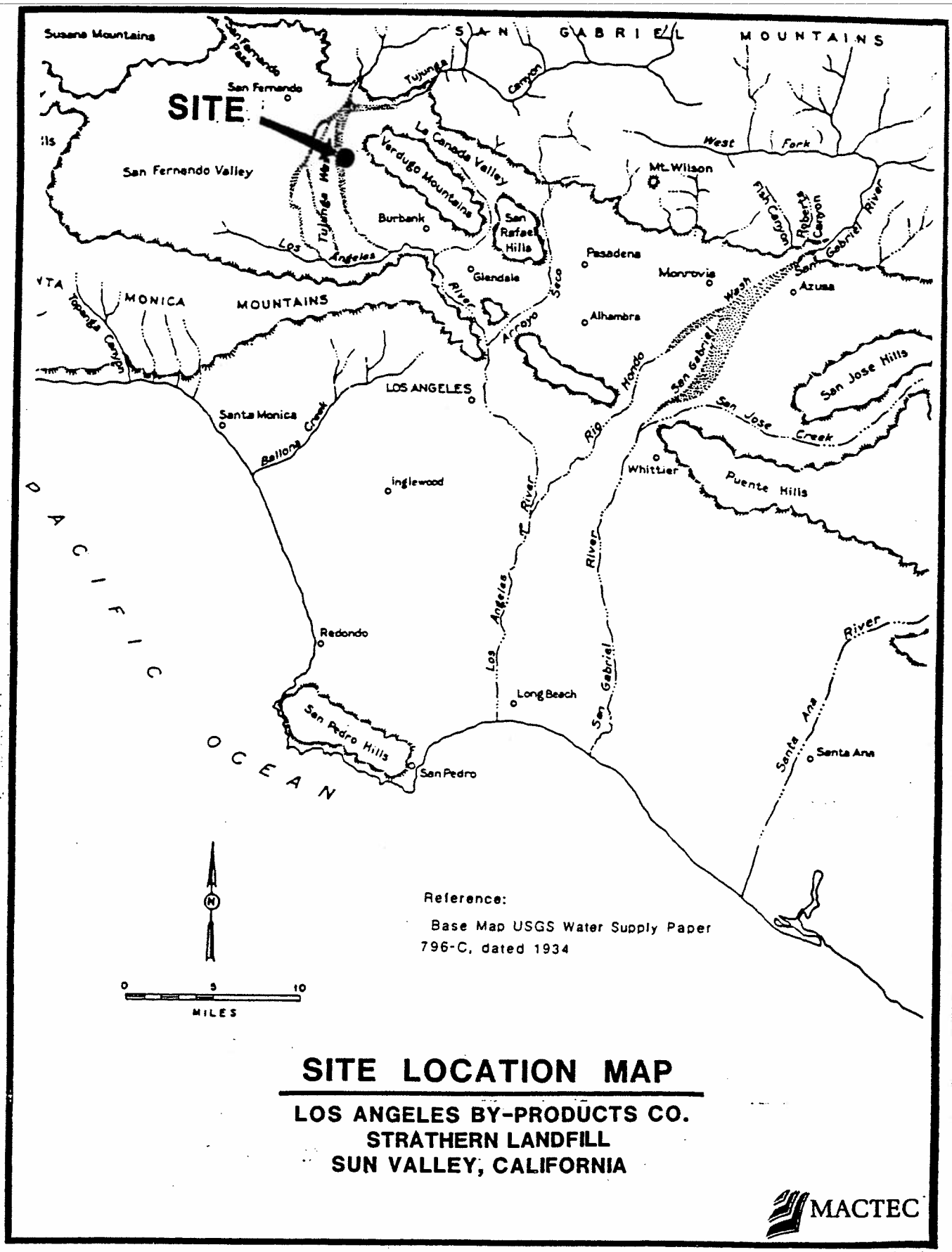
** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

NS = Not sampled due to insufficient water in well.

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

MACTEC

FIGURE 1

JOB 7011-2-0344 DATE 2-11-02 DR. O.E. KVF CHKD

FORM 120

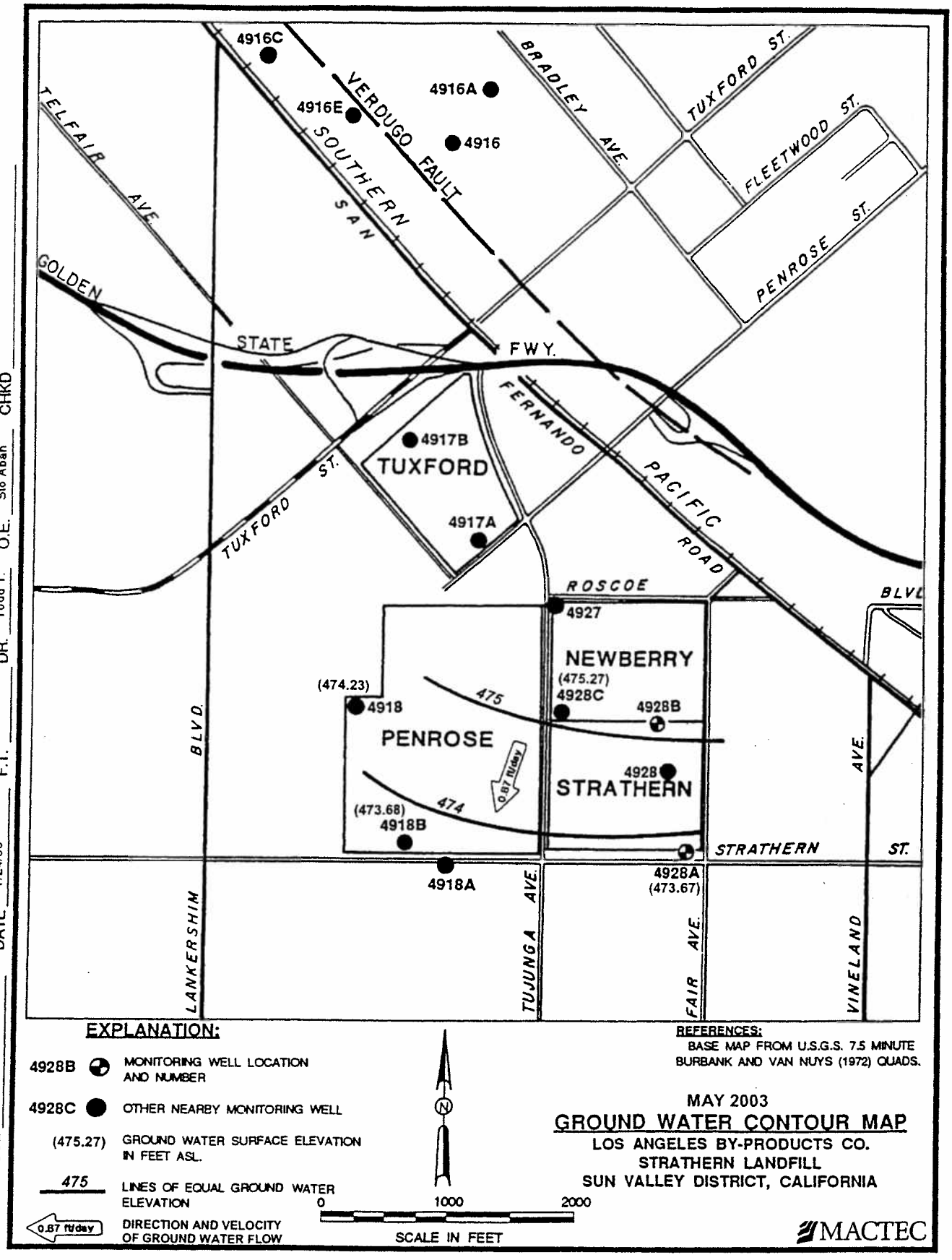

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
4917B
TUXFORD
4917A
TUXFORD ST.
PACIFIC ROAD
ROSCOE BLVD
4927
NEWBERRY
(475.27)
4928C
4928B
(474.23)
4918
475
PENROSE
0.87 ft/day
4928
STRATHERN
474
(473.68)
4918B
STRATHERN ST.
4918A
4928A
(473.67)
LANKERSHIM BLVD
TUJUNGA AVE.
FAIR AVE.
VINELAND AVE.
DATE 7/24/03
DR. Todd T.
O.E. Slo Aban
CHKD
JOB 70111-2-0346
F.T.
EXPLANATION:
4928B MONITORING WELL LOCATION AND NUMBER
4928C OTHER NEARBY MONITORING WELL
(475.27) GROUND WATER SURFACE ELEVATION IN FEET ASL.
475 LINES OF EQUAL GROUND WATER ELEVATION
0.87 ft/day DIRECTION AND VELOCITY OF GROUND WATER FLOW
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MAY 2003
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC

FIGURE 2

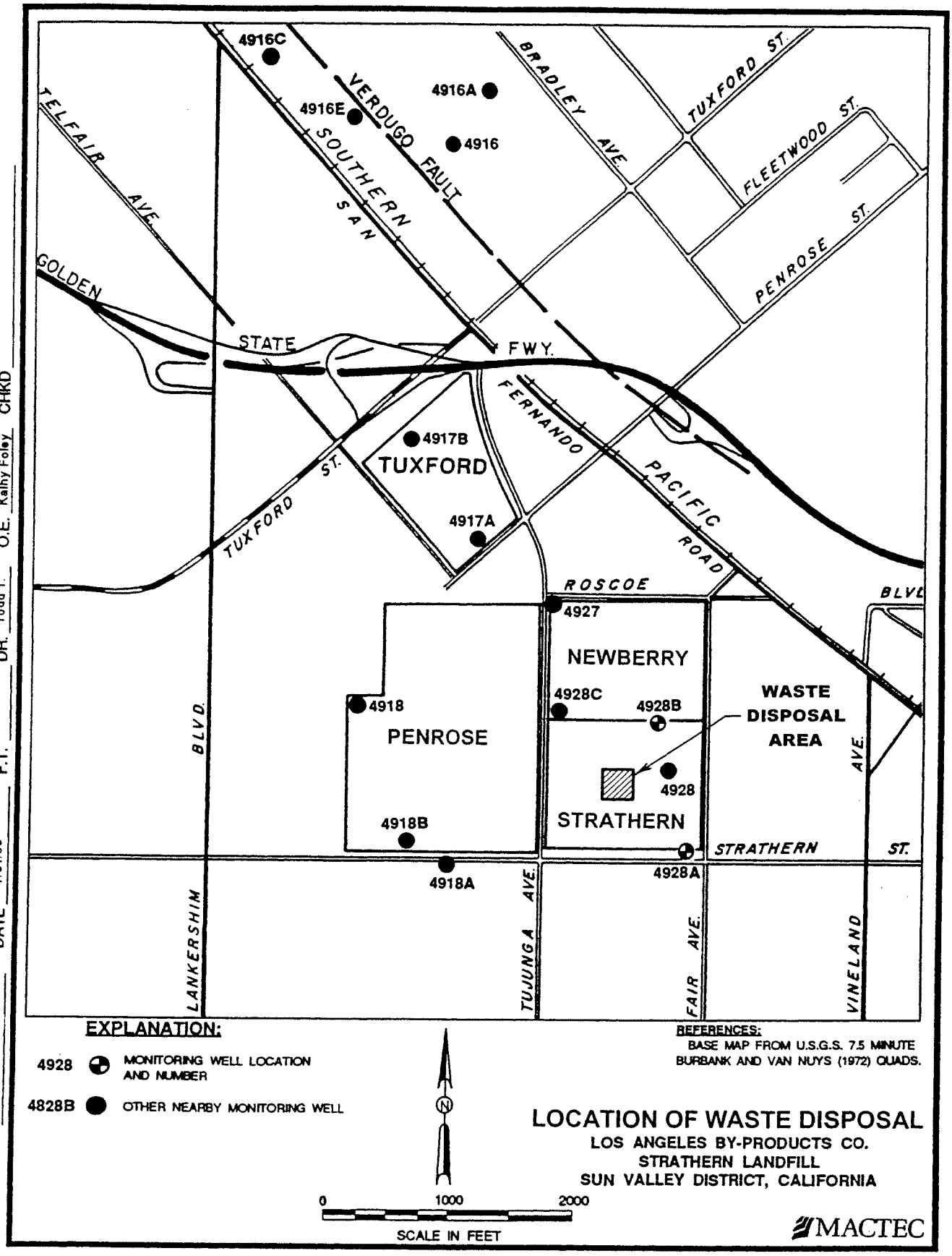

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
PACIFIC ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE BLVD
4927
NEWBERRY
4928C
4928B
WASTE DISPOSAL AREA
4918
PENROSE
4928
STRATHERN
4918B
STRATHERN ST.
4928A
4918A
BLVD.
AVE.
LANKERSHIM
TUJUNGA AVE
FAIR AVE.
VINELAND
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
N
0
1000
2000
SCALE IN FEET
LOCATION OF WASTE DISPOSAL
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC
JOB 70111-2-0346 DATE 7/31/03 F.T. DR. Todd T. O.E. Kathy Foley CHKD

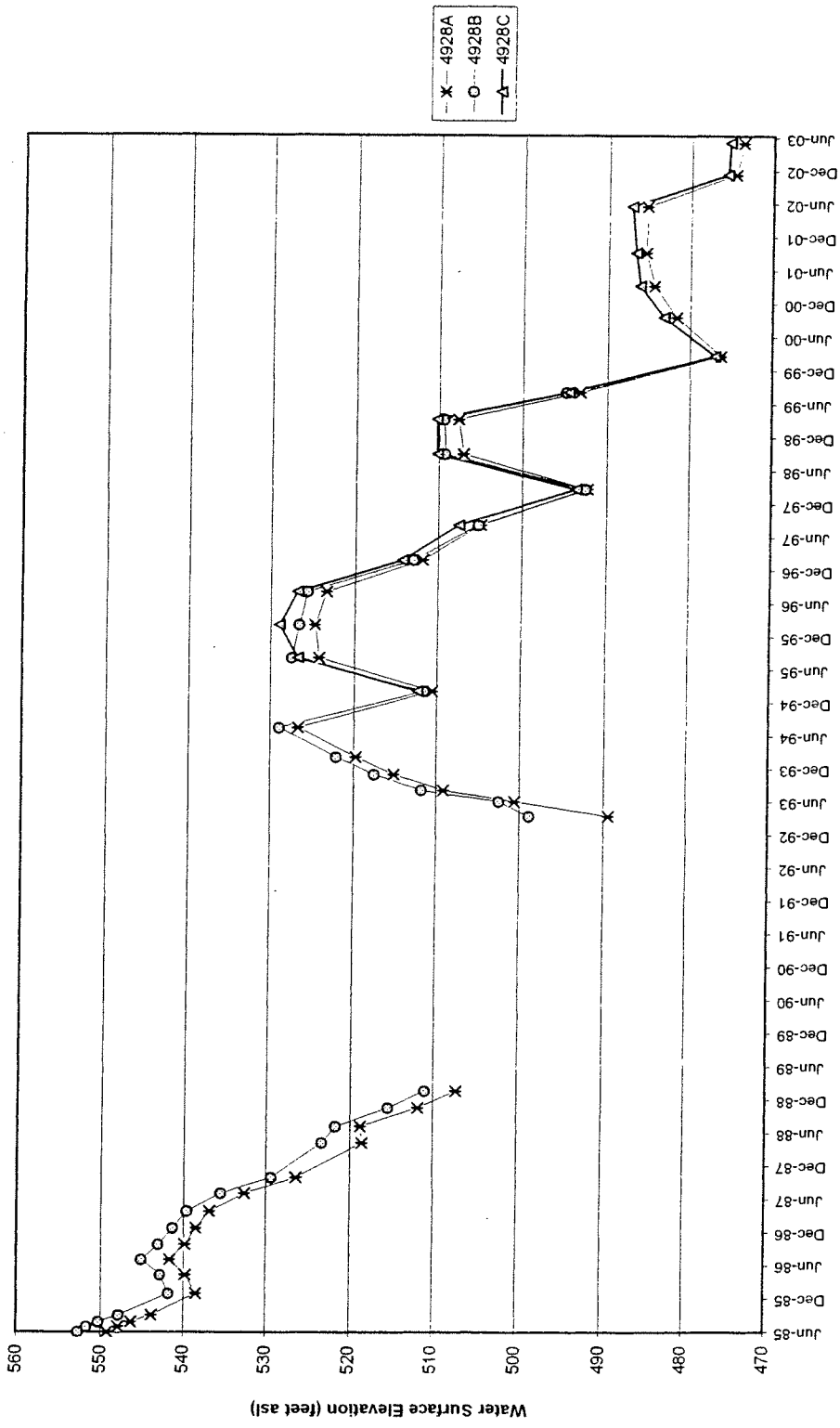
FIGURE 3

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

MACTEC

Figure 4

HYDROGRAPH
Strathern Landfill



APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 7/30/03 F.T. _____ DR. _____ O.E. ETA CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84								560	7.70	73	18	26	4.2	0.0	280
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	620
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.10	170	38	80	8.0	0.0	390
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590
4928A	15-Apr-87		536.66	5.8	69	1100	42.5	490	1500	6.80	170	44	85	6.8	<0.6	650
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590
4928A	29-Apr-88		518.58	8.0	68	950	32.0	203	1000	7.30	110	63	83	6.4	<0.6	480
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290
4928A	24-Aug-93		509.08	NA	87	550	25	244	610	7.10	73	18	30	4.8	<0.6	290
4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430
4928A	05-Aug-94		526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330
4928A	20-Feb-95		510.49						830	6.90	97	25	36	5.3	<0.8	390
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380
4928A	23-Aug-96		523.41													
4928A	11-Sep-96		NM													
4928A	31-Oct-96		516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97		511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390
4928A	26-Aug-97		504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400
4928A	12-Mar-98		492.23	7.30	68	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320
4928A	21-Sep-98		507.01	7.17	68	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358
4928A	30-Mar-99		507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324
4928A	25-Aug-99		493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332
4928A	10-Mar-00		476.16	7.25	84	528	35	340	800	7.13	102	25.8	30.1	7.0	<1	296
4928A	09-Oct-00		481.63	6.76	67	800	30	372	790	6.81	93.9	24.2	32.8	5.5	<1	266
4928A	29-Mar-01		484.40	7.44	65	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290
4928A	25-Sep-01		485.40	8.10	68	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288
4928A	05-Jun-02		485.26	7.65	66	766	26	363	781	7.20	88.6	24.1	34.5	15.8	<1	282
4928A	27-Nov-02		474.58	6.90	65	722	32	336	824	7.13	99.4	26.1	35.3	5.5	<1	280
4928A	30-May-03		473.67	7.31	67	664	33	348	720	7.26	81.4	21.1	29.5	4.59	<1	284

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JOB 70111-2-0346 DATE 7/30/03 F.T. _____ DR. _____ O.E. CTM CHKD RVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	WATER LEVEL REF PT. W S E		FIELD MEASUREMENTS fpH	T(f)	fEC	CO2	Alk	GENERAL MINERALS EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	62	24	84	6.2	0.0	450
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.8	356
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350
4928B	08-Nov-88		515.47	7.3	68	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370
4928B	19-Nov-93		517.50	7.8	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.8	550
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	61	9	<2.0	502
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													
4928B	25-Sep-01		DRY													
4928B	05-Jun-02		DRY													
4928B	27-Nov-02		DRY													

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JOB 70111-2-0346 DATE 7/30/03 F.T. _____ DR. _____ O.E. ETA CHKD LRF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.16													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		476.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670
4928C	27-Nov-02		475.52													
4928C	30-May-03		475.27													
4918	24-Aug-95	827.13	528.79													
4918	23-Feb-96		525.94													
4918	23-Aug-96		524.13													
4918	14-Feb-97		512.43													
4918	26-Aug-97		504.49			30032.8										
4918	12-Mar-98		490.04			32755.2										
4918	21-Sep-98		509.82			35347.2										
4918	30-Mar-99		506.94													
4918	25-Aug-99		490.45													
4918	29-Mar-01		484.46													
4918	25-Sep-01		485.93													
4918	05-Jun-02		486.01			-0.91		44	27	66						
4918	27-Nov-02		487.48			-0.25		129	345	47						
4918	30-May-03		474.23			-13.25		336	199	173						
						-4.80		103	2020	44						
								67	2120	46						
4918B	24-Aug-95	810.38	524.25						736	###						
4918B	23-Feb-96		523.41						3270							
4918B	23-Aug-96		524.07			11162		679	8717	###						
4918B	14-Feb-97		510.61													
4918B	26-Aug-97		501.43													
4918B	12-Mar-98		NA													
4918B	21-Sep-98		506.52													
4918B	30-Mar-99		NA													
4918B	25-Aug-99		NA													
4918B	29-Mar-01		483.29													
4918B	25-Sep-01		DRY													
4918B	30-May-03		473.68													

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	15.0			650			1			1.0		0.70	10	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		600	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<6	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	48	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	67	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	26-Aug-97	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<6	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	75	33	53.1	0.4	348	476	5.4'	0.6	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014'	0.215	<50	<10	AETL

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JOB 70111-2-0346 DATE 7/30/03 F.T. _____ DR. _____ O.E. ETA CHKD KVE

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	61	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	16-Jan-86	28	25	26.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-86	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-86	60	35	15.0	0.3		440	<0.05	<1	<1			<10		0.29	<20		B&C
4928B	14-Jan-87	51	18	5.3	0.5		420	0.10	<1	2			<10		<0.03	<20	<0.06	B&C
4928B	15-Apr-87	54	18	6.6	0.4		410	0.08	<1	2			<10		0.88	<10	<0.04	B&C
4928B	24-Jul-87	50	24	6.8			430	<0.05	<1	4			<20		<0.02	<20	<0.04	B&C
4928B	21-Oct-87	50	21	6.4	0.25		430	<0.05	<1	<1			<20		0.20	<10	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7.0	<1	3			<20		5.70	13	<0.004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	6.0	<1	4			<1		<0.02	<2	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0.16		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89	56	17	3.9	<0.02		400	<5	1	5			<1		2.20	3	<0.04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0.5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1.7			1		14	24	<0.04	B&C
4928B	24-Aug-93	46	17	3.4			390	<6	<1	2.0			<1		17	18	<0.04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0.5	1.4			<1		82	3	<0.04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0.5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0.27		600		1.1	2.7			<3		7.9	17	<0.005	B&C
4928B	20-Feb-95	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<5	<10	2.4	18	<0.04	B&C
4928B	24-Aug-95	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2.6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0.31		760		1.4	5.6			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	26-Aug-97	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		602	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98	57	39	6.2	0.3		618	<6	<0.5	1.6			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99	53	55	1.3	0.3		789	<6.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99	67	40	6.6	0.3		754	<6.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	
4928B	25-Sep-01																	
4928B	05-Jun-02																	
4928B	27-Nov-02																	

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JOB 70111-2-0346 DATE 7/30/03 F.T. _____ DR. _____ O.E. ETA CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
	UNITS	SO4 mg/L	Cl mg/L	NO3 mg/L	B mg/L	HARD mg/L	TDS mg/L	COD mg/L	TCE µg/L	PCE µg/L	BENZENE µg/L	VC µg/L	Cd µg/L	Cr µg/L	Fe mg/L	Pb µg/L	Ni µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4'	5.4	<0.25	<0.25	<10	20'	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4'	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02																	
4928C	30-May-03																	
4918	24-Aug-95																	
4918	23-Feb-96																	
4918	23-Aug-96																	
4918	14-Feb-97																	
4918	26-Aug-97																	
4918	12-Mar-98																	
4918	21-Sep-98																	
4918	30-Mar-99																	
4918	25-Aug-99																	
4918	29-Mar-01																	
4918	25-Sep-01																	
4918	05-Jun-02																	
4918	27-Nov-02																	
4918	30-May-03																	
4918B	24-Aug-95																	
4918B	23-Feb-96																	
4918B	23-Aug-96																	
4918B	14-Feb-97																	
4918B	26-Aug-97																	
4918B	12-Mar-98																	
4918B	21-Sep-98																	
4918B	30-Mar-99																	
4918B	25-Aug-99																	
4918B	29-Mar-01																	
4918B	25-Sep-01																	
4918B	30-May-03																	

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 05/30/2003
Date Reported 06/27/2003

Job Number	Order Date	Client
25587	05/30/2003	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003067

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CHAIN OF CUSTODY RECORD

PO#: MEC06030161

AETL JOB No. 25587

Page 1 of 1

COMPANY	Macfee
PHONE	323-889-5300
PROJECT MANAGER	Bill O'Brazil / Attn: Sto Aban
FAX	323-721-6700
PROJECT NAME	Strathern
PROJECT #	70111 20346
SITE NAME AND ADDRESS	Strathern

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	ANALYSIS REQUESTED: 524.2	Metals	General / Misc.	TEST INSTRUCTIONS & COMMENTS
1	4478 A	25587.01	5-30-03	1430	water	various	HCl (524.2)	X	X	X	list NO_3 as NO_3
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	4	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N / (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) / N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

	RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:	Sto Aban		
Printed Name:	Sto Aban		
Date / Time:	5-30-03 / 1530	/	/
	RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: AETL 3.**
Signature:			
Printed Name:			G. MORELLI
Date / Time:	/	/	5-30-03 / 1530

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

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Los Angeles, CA 90040-1554

Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 05312003 QC Prepared: 05/31/2003 QC Analyzed: 05/31/2003

Our Lab I.D.				25587.01
Client Sample I.D.			Method Blank	4928A
Date Sampled			05/30/2003	05/30/2003
Date Prepared			05/30/2003	05/30/2003
Preparation Method			5035	5035
Date Analyzed			05/31/2003	05/31/2003
Matrix			Aqueous	Aqueous
Units			ug/L	ug/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
Benzene	0.25	0.50	ND	ND
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND
Bromochloromethane	0.25	0.50	ND	ND
Bromodichloromethane	0.25	0.50	ND	ND
Bromoform (Tribromomethane)	0.25	0.50	ND	ND
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND
n-Butylbenzene	0.25	0.50	ND	ND
sec-Butylbenzene	0.25	0.50	ND	ND
tert-Butylbenzene	0.25	0.50	ND	ND
Carbon tetrachloride	0.25	0.50	ND	ND
Chlorobenzene	0.25	0.50	ND	ND
Chloroethane	0.25	0.50	ND	ND
Chloroform (Trichloromethane)	0.25	0.50	ND	ND
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND
2-Chlorotoluene	0.25	0.50	ND	ND
4-Chlorotoluene	0.25	0.50	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND
Dibromochloromethane	0.25	0.50	ND	ND
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND
Dibromomethane	0.5	1.0	ND	ND
1,2-Dichlorobenzene	0.25	0.50	ND	ND
1,3-Dichlorobenzene	0.25	0.50	ND	ND
1,4-Dichlorobenzene	0.25	0.50	ND	ND
Dichlorodifluoromethane	0.25	0.50	ND	2.4
1,1-Dichloroethane	0.25	0.50	ND	2.7
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
25587	05/30/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 05312003 QC Prepared: 05/31/2003 QC Analyzed: 05/31/2003

Our Lab I.D.				**25587.01**
Client Sample I.D.			Method Blank	4928A
Date Sampled			05/30/2003	05/30/2003
Date Prepared			05/30/2003	05/30/2003
Preparation Method			5035	5035
Date Analyzed			05/31/2003	05/31/2003
Matrix			Aqueous	Aqueous
Units			ug/L	ug/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
1,1-Dichloroethene	0.25	0.50	ND	ND
cis-1,2-Dichloroethene	0.25	0.50	ND	0.4J
trans-1,2-Dichloroethene	0.25	0.50	ND	ND
1,2-Dichloropropane	0.25	0.50	ND	ND
1,3-Dichloropropane	0.25	0.50	ND	ND
2,2-Dichloropropane	0.25	0.50	ND	ND
1,1-Dichloropropene	0.25	0.50	ND	ND
cis-1,3-Dichloropropene	0.25	0.50	ND	ND
trans-1,3-Dichloropropene	0.25	0.50	ND	ND
Ethylbenzene	0.25	0.50	ND	ND
Hexachlorobutadiene	0.25	0.50	ND	ND
Isopropylbenzene	0.25	0.50	ND	ND
p-Isopropyltoluene	0.25	0.50	ND	ND
Methylene chloride (DCM)	0.5	1.0	ND	ND
Naphthalene	0.5	1.0	ND	ND
n-Propylbenzene	0.25	0.50	ND	ND
Styrene	0.25	0.50	ND	ND
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND
Tetrachloroethene	0.25	0.50	ND	7.0
Toluene (Methyl benzene)	0.25	0.50	ND	ND
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND
1,1,1-Trichloroethane	0.25	0.50	ND	ND
1,1,2-Trichloroethane	0.25	0.50	ND	ND
Trichloroethene	0.25	0.50	ND	0.7
Trichlorofluoromethane	0.5	1.0	ND	ND
1,2,3-Trichloropropane	0.5	1.0	ND	ND
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND
o-xylene	0.25	0.50	ND	ND
m,p-Xylenes	0.5	1.0	ND	ND

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Clien
25587	05/30/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				25587.01			
Surrogates	Con.Limit		% Rec.	% Rec.			
Bromofluorobenzene	75-125		93	92			
1,2-Dichlorobenzene	75-125		92	97			

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Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 05302003 QC Prepared: 05/30/2003 QC Analyzed: 06/11/2003

Our Lab I.D.				25587.01
Client Sample I.D.			Method Blank	4928A
Date Sampled			05/30/2003	05/30/2003
Date Prepared			05/30/2003	05/30/2003
Preparation Method			Various	Various
Date Analyzed			06/11/2003	06/11/2003
Matrix			Aqueous	Aqueous
Units			mg/L	mg/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
Bicarbonate (as CaCO3)	1	2	ND	284
Carbonate (as CaCO3)	1	2	ND	ND
Hydroxide (as CaCO3)	1	2	ND	ND
Total Alkalinity	1	2	ND	284
Anions Total (meq/L)	0.01	0.01	NA	7.62
Cations Total (meq/L)	0.01	0.01	NA	7.23
Ion Balance (percent difference)	0.01	0.01	NA	2.63
Nitrate	0.05	0.10	ND	11.3
Chloride (Cl), Total	0.5	1.0	ND	20.0
Conductivity (umhos/cm @77F)	5	10	ND	720
Fluoride, Total	0.1	0.2	ND	0.390
Hardness (Ca,Mg) as CaCO3	1	2	ND	318
Nitrite as Nitrogen	0.01	0.02	ND	ND
pH (pH units)	0.01	0.01	NA	7.26
Sulfate	5	10	ND	56.8
Surfactants (MBAS)	0.03	0.05	ND	ND
Total Dissolved Solids	5	10	ND	432
Aluminum	0.05	0.10	ND	ND
Calcium	0.25	0.50	ND	81.4
Iron	0.03	0.05	ND	0.215
Magnesium	0.25	0.50	ND	21.1
Manganese	0.005	0.010	ND	ND
Potassium	0.5	1.0	ND	4.59
Sodium	0.25	0.50	ND	29.5
Zinc	0.01	0.03	ND	0.253

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Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Our Lab I.D.							N/A	25587.01
Client Sample I.D.							Method Blank	4928A
Date Sampled							05/30/2003	05/30/2003
Matrix							Aqueous	Aqueous
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**
Cadmium	1	200.7	mg/L	0.01	0.05	06/11/2003	ND	ND
Chromium	1	200.7	mg/L	0.01	0.05	06/11/2003	ND	0.014J
Lead	1	200.7	mg/L	0.05	0.10	06/11/2003	ND	ND
Nickel	1	200.7	mg/L	0.01	0.05	06/11/2003	ND	ND
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/04/2003	ND	ND
Boron	1	SM-4500B	mg/L	0.1	0.2	06/04/2003	ND	0.270

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch No: 06102003-1 QC Prepared: 06/10/2003 QC Analyzed: 06/11/2003

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	1.00	0.95	95	1.00	0.92	92	3.2	80-120	<15
Chromium	1.00	0.96	96	1.00	0.93	93	3.2	80-120	<15
Lead	1.00	0.97	97	1.00	0.90	90	7.5	80-120	<15
Nickel	1.00	0.95	95	1.00	0.91	91	4.3	80-120	<15

QC Batch No: 06102003-1 QC Prepared: 06/10/2003 QC Analyzed: 06/11/2003

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	0.98	98	80-120
Chromium	1.00	0.96	96	80-120
Lead	1.00	0.93	93	80-120
Nickel	1.00	0.98	98	80-120

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Sun Valley, CA

Telephone: (323)889-5300
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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 06042003 QC Prepared: 06/04/2003 QC Analyzed: 06/04/2003

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	50.00	46.00	92	50.00	48.00	96	4.3	80-120	<15

QC Batch No: 06042003 QC Prepared: 06/04/2003 QC Analyzed: 06/04/2003

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	46.50	93	80-120

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Telephone: (323)889-5300
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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 05312003 QC Prepared: 05/31/2003 QC Analyzed: 05/31/2003

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	25.00	26.00	104	25.00	24.25	97	7.0	75-125	<20
Chlorobenzene	25.00	27.25	109	25.00	26.75	107	1.9	75-125	<20
1,1-Dichloroethene	25.00	25.25	101	25.00	24.50	98	3.0	75-125	<20
Toluene (Methyl benzene)	25.00	25.50	102	25.00	24.50	98	4.0	75-125	<20
LCS									
Chloroform (Trichloromethane)	25.00	24.25	97	25.00	26.75	107	9.8	75-125	<20
Ethylbenzene	25.00	28.00	112	25.00	26.00	104	7.4	75-125	<20
1,1,1-Trichloroethane	25.00	25.00	100	25.00	23.75	95	5.1	75-125	<20
Trichloroethene	25.00	25.00	100	25.00	24.00	96	4.1	75-125	<20
o-Xylene	25.00	27.00	108	25.00	25.25	101	6.7	75-125	<20
m,p-Xylenes	50.00	56.00	112	50.00	52.00	104	7.4	75-125	<20

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ANALYTICAL RESULTS

Ordered By
MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: GEN.-MINERALS, General Minerals (LC List)
QUALITY CONTROL REPORT

QC Batch No: 05302003 QC Prepared: 05/30/2003 QC Analyzed: 06/11/2003

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	20.00	22.00	110	20.00	22.00	110	<1	80-120	<15
Total Alkalinity	20.00	22.00	110	20.00	22.00	110	<1	80-120	<15
Nitrate	0.50	0.49	98	0.50	0.50	100	2.0	80-120	<15
Chloride (Cl), Total	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Fluoride, Total	1.00	1.01	101	1.00	1.03	103	2.0	80-120	<15
Hardness (Ca,Mg) as CaCO3	20.00	21.00	105	20.00	20.00	100	4.9	80-120	<15
Nitrite as Nitrogen	0.20	0.20	102	0.20	0.21	103	<1	80-120	<15
Sulfate	20.00	20.00	100	20.00	19.40	97	3.0	80-120	<15
Surfactants (MBAS)	0.20	0.21	104	0.20	0.21	105	<1	80-120	<15
Aluminum	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15
Calcium	1.00	0.94	94	1.00	0.98	98	4.2	80-120	<15
Iron	1.00	0.99	99	1.00	0.98	98	1.0	80-120	<15
Magnesium	1.00	0.91	91	1.00	0.98	98	7.4	80-120	<15
Manganese	1.00	0.94	94	1.00	0.91	91	3.2	80-120	<15
Potassium	0.01	0.01	99	0.01	0.01	99	<1	80-120	<15
Sodium	1.00	0.99	99	1.00	0.99	99	<1	80-120	<15
Zinc	1.00	0.98	98	1.00	0.94	94	4.2	80-120	<15

QC Batch No: 05302003 QC Prepared: 05/30/2003 QC Analyzed: 06/11/2003

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Nitrate	0.50	0.50	99	80-120
Chloride (Cl), Total	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Fluoride, Total	1.00	1.00	100	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
Nitrite as Nitrogen	0.20	0.19	96	80-120
pH (pH units)	7.00	7.00	100	80-120

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
25587	05/30/2003	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 05302003 QC Prepared: 05/30/2003 QC Analyzed: 06/11/2003

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Sulfate	20.00	19.60	98	80-120
Surfactants (MBAS)	0.20	0.21	105	80-120
Total Dissolved Solids	100.00	93.00	93	80-120
Aluminum	1.00	0.91	91	80-120
Calcium	1.00	0.94	94	80-120
Iron	1.00	0.99	99	80-120
Magnesium	1.00	0.91	91	80-120
Manganese	1.00	0.96	96	80-120
Potassium	0.01	0.01	97	80-120
Sodium	1.00	0.99	99	80-120
Zinc	1.00	0.96	96	80-120

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ANALYTICAL RESULTS

Ordered By
MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
25587	05/30/2003	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 06042003 QC Prepared: 06/04/2003 QC Analyzed: 06/04/2003

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.50	0.53	106	0.50	0.53	106	<1	80-120	<15

QC Batch No: 06042003 QC Prepared: 06/04/2003 QC Analyzed: 06/04/2003

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Boron	0.138	0.130	6.0	<15	0.50	0.54	107	80-120

003079

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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FOURTH QUARTER 2003
GROUNDWATER MONITORING REPORT
AND ANNUAL SUMMARY

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

RWQCB Order No. 91-086
File No. 58-137
CI No. 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY
Los Alamitos, California

Prepared by

MACTEC Engineering and Consulting, Inc.
Los Angeles, California

MACTEC Project 4951-03-3551

January 14, 2004

MACTEC

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January 14, 2004

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Fourth Quarter 2003 Groundwater Monitoring Report**
And Annual Summary
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB File No. 58-137, Order No. 91-086, CI No. 7055
MACTEC Project 4951-03-3551

INTRODUCTORY SUMMARY

MACTEC Engineering and Consulting, Inc., (MACTEC) prepared this report for Los Angeles By-Products Company to satisfy requirements of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) Waste Discharge Requirements (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) CI-7055 adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting of waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring and reporting was done during the first and third quarters by MACTEC, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, the Regional Water Quality Control Board (RWQCB) requested that reports be submitted on January 15 and July 15 as stated in the MRP. The RWQCB also requested that reporting of waste disposal quantities be combined with the groundwater monitoring report. This report presents the results of fourth quarter 2003 groundwater monitoring and waste disposal activities at Strathern Landfill. This report also contains a summary of the results of groundwater monitoring and waste disposal at the site during 2003.

MACTEC Engineering and Consulting
200 Citadel Drive • Los Angeles, CA 90040
323-889-5300 • Fax: 323-721-6700

Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B has been dry since the first quarter of 2000. Therefore on March 23, 2001, we requested and received permission from the RWQCB to monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Groundwater levels in the area have increased since the fourth quarter 2002. However, groundwater measurements during the second and fourth quarters of 2003 show that monitoring well 4928B continues to be dry. Due to the decline of groundwater levels, during the second quarter the water level in well 4928C had declined below the level of the well pump. In November 2003, well 4928C was redeveloped and a new pump was installed.

Well 4928A was sampled in the second quarter and both wells 4928A and 4928C were sampled in the fourth quarter 2003. The analytical results of groundwater samples from 4928A are similar to historical results. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS), and electrical conductivity (EC) in well 4928A during the fourth quarter of 2003. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) of 7.0 parts per billion (ppb) in well 4928A during the second quarter 2003 and 6.4 ppb in well 4928C in the fourth quarter 2003. These results are similar to historical results. Based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

MACTEC measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) CI-7055. MACTEC personnel collected water samples and transported them to the laboratory in accordance with current U.S. Environmental Protection Agency (EPA) sample collection procedure guidelines. Samples were chilled while in transit to the laboratory.

All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services (DOHS) and in accordance with current EPA guideline procedures as specified in

the monitoring program. American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MACTEC prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, and aggregates. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP CI-7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting of groundwater quality and quarterly reporting of waste disposal. This report presents the results of fourth quarter 2003 groundwater monitoring and waste disposal activities at Strathern Landfill. This report also contains a summary of the results of groundwater monitoring and waste disposal at the site during 2003.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

FOURTH QUARTER 2003 MONITORING RESULTS

This section presents the monitoring results including waste disposal, groundwater levels, and groundwater quality during the fourth quarter of 2003.

WASTE DISPOSAL

Strathern Landfill accepts inert fill consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. During the fourth quarter 2003, Los Angeles By-Products received about 92,795 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of waste deposited during the fourth quarter of 2003. Figure 3 shows the approximate location of waste disposal during the fourth quarter of 2003. The remaining capacity of the Strathern Landfill is about 2.64 million tons. The estimated remaining life of the site is 7.78 years.

The waste tonnage recorded in this report has been attested to, and certified by the Vice-President of Los Angeles By-Products Company. The certification of deposited waste is attached to the end of this report.

GROUNDWATER LEVELS

Between the second and fourth quarters of 2003, groundwater levels increased about 4.3 feet in the monitoring wells. During the fourth quarter well 4928B was dry. This is maybe related to the past few dry summer seasons and minimal groundwater recharge efforts by Los Angeles County Department of Public Works.

In November 2003, as requested by Los Angeles By-Products, the pump in well 4928C was replaced at a lower level the well. During the pump replacement, an accumulation of sediment in the bottom of the well casing was removed.

GROUNDWATER QUALITY

Groundwater samples for the fourth quarter were collected from wells 4928A and 4928C on December 10, 2003. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains the results of field and laboratory analyses for the fourth quarter 2003, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains the analytical results and chain-of-custody records from AETL for groundwater samples collected in the fourth quarter of 2003.

Inorganics

Laboratory analyses indicated that during the fourth quarter of 2003, the groundwater met California Drinking Water Standards for most constituents. At well 4928A during the fourth quarter, total dissolved solids (TDS) and electrical conductivity (EC) exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively. Table 3 shows 2003 results compared to California Drinking Water Standards.

Organics

During the fourth quarter 2003, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) of 6.4 parts per billion (ppb) in well 4928C. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

ANNUAL SUMMARY

This section presents a summary of monitoring results for 2003, including waste disposal, groundwater levels, and groundwater quality.

WASTE DISPOSAL

During 2003, Los Angeles By-Products received about 429,284 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of waste deposited during each month of 2003.

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GROUNDWATER LEVELS

Water levels decreased by about 0.5 foot between the fourth quarter 2002 and the second quarter 2003. Between the second and fourth quarters of 2003, groundwater levels increased about 4.3 feet, although they remain near the site's historic low groundwater levels. According to the Los Angeles County Department of Public Works (LADPW), 12,273 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2002 through September 2003. This may have contributed to the minor increase in groundwater levels. Figure 4 contains the hydrographs for the on-site monitoring wells. The groundwater database in Appendix A contains the water level data for 2003, as well as data from previous years. We contoured the groundwater levels for the second and fourth quarters of 2003. Appendix B contains the contour maps.

GROUNDWATER QUALITY

MACTEC collected groundwater samples from well 4928A during the second quarter. Samples were not collected from well 4928C in the second quarter. Due to the decline of groundwater levels, the water level in well 4928C had declined below the level of the well pump. In November 2003, well 4928C was redeveloped and a new pump was installed. Groundwater samples for the fourth quarter were collected from wells 4928A and 4928C.

Laboratory analyses indicated that during 2003, the groundwater met California Drinking Water Standards for most constituents. At well 4928A during the fourth quarter, total dissolved solids (TDS) and electrical conductivity (EC) exceeded the secondary drinking water standards of 500 mg/l and 900 µmhos/cm, respectively.

During 2003, levels of organic constituents were below California Drinking Water Standards, except for tetrachloroethene (PCE) of 7.0 ppb in well 4928A during the second quarter and 6.4 ppb in well 4928C in the fourth quarter. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

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CONCLUSIONS AND RECOMMENDATIONS

Water levels decreased slightly between the fourth quarter of 2002 and the second quarter of 2003. Between the second and fourth quarters of 2003, groundwater levels increased approximately 4.3 feet, however, they remain near the site's historic low water level. Due to an overall decrease in regional groundwater levels over the past years, upgradient well 4928B was dry during the second and fourth quarter monitoring events. Other monitoring wells in the area used for groundwater level measurements are also dry. This is may be related to the past few dry summer seasons and minimal groundwater recharge efforts by LADPW.

Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS), and electrical conductivity (EC). Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE in well 4928C. There does not appear to be a correlation between landfill operations and groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for leachate from the landfill continues to be low. MACTEC will continue to monitor the groundwater at Strathern Landfill.

003088

We appreciate working with you on this project. If you have any questions regarding this report, please contact Katherine Foley at (323) 889-5340.

Sincerely,

MACTEC Engineering and Consulting

Katherine V. Foley
Staff Geologist

William J. O'Braitis, C.E.G.
Principal Geologist

by ___ with permission

P:\70111 ENVIRONMENTAL\2003_PROJ\33551 (STRATHERN LANDFILL)\DELIVERABLES\2003\33551AR03.DOC/EA:
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Regional Board's requirements.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 14TH day of JANUARY, 2004, at Los Alamitos, California.

Ted Phillips
Vice President
Los Angeles By-Products Company

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Quantities of Fill Deposited During 2003

Quarter	Month	Tons	Cubic Yards* (Approximate)
1	January	34,505	27,604
	February	22,825	18,260
	March	41,279	33,023
2	April	37,541	30,033
	May	40,944	32,755
	June	44,184	35,347
3	July	45,094	36,075
	August	33,445	23,756
	September	36,672	29,338
4	October	34,367	27,494
	November	28,789	23,031
	December	29,639	23,711
TOTALS		429,284	343,427

* 1.25 tons per cubic yard

Prepared by: SA – 1/9/04
Checked by: KF – 1/9/04

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Table 3: Site Water Quality vs. California Drinking Water Standards
2003 Cumulative Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
			4928A (downgradient)		4928C(upgradient)	
			May	December	May	December
Field Measurements						
pH	pH units	6 – 9	7.31	7.40	—	7.45
Conductivity	µmhos/cm	900*	664	1300	—	680
Carbon Dioxide	mg/L	—	33	35	—	30
Alkalinity	mg/L	—	348	530	—	340
Inorganic						
pH	pH units	6 – 9	7.26	7.06	—	7.24
Electrical Conductivity	µmhos/cm	900*	720	1120	—	756
Carbon Dioxide	mg/L	—	—	58.1	—	29.9
Alkalinity	mg/L	—	284	464	—	290
Total Dissolved Solids (TDS)	mg/L	500*	432	685	—	456
Chloride (Cl)	mg/L	250*	20.0	63	—	31
Sulfate (SO4)	mg/L	250*	56.8	60.4	—	62.8
Nitrate (NO3)	mg/L	45	11.3	27.9	—	21.7
Boron (B)	mg/L	1**	0.270	0.512	—	0.285
Chemical Oxygen Demand (COD)	mg/L	—	<5.0	13.7	—	12.4
Bicarbonate (HCO3)	mg/L	—	284	464	—	290
Iron (Fe)	mg/L	0.3*	0.215	<0.02	—	<0.02
Carbonate (CO3)	mg/L	—	<1	<1	—	<1
Cadmium (Cd)	µg/L	5	<10	<5	—	<5
Chromium (Cr)	µg/L	50	14[J]	12[J]	—	<10
Lead (Pb)	µg/L	15**	<50	<15	—	<15
Nickel (Ni)	µg/L	100	<10	<10	—	<10
Organic						
Benzene	µg/L	1	<0.25	<0.25	—	<0.25
Trichloroethylene (TCE)	µg/L	5	0.7	0.4[J]	—	0.8
Tetrachloroethylene (PCE)	µg/L	5	7.0	4.5	—	6.4
Vinyl Chloride (VC)	µg/L	0.5	<0.25	<0.25	—	<0.25

Prepared/Date: SA – 1/8/04
Checked/Date: KF – 1/9/04

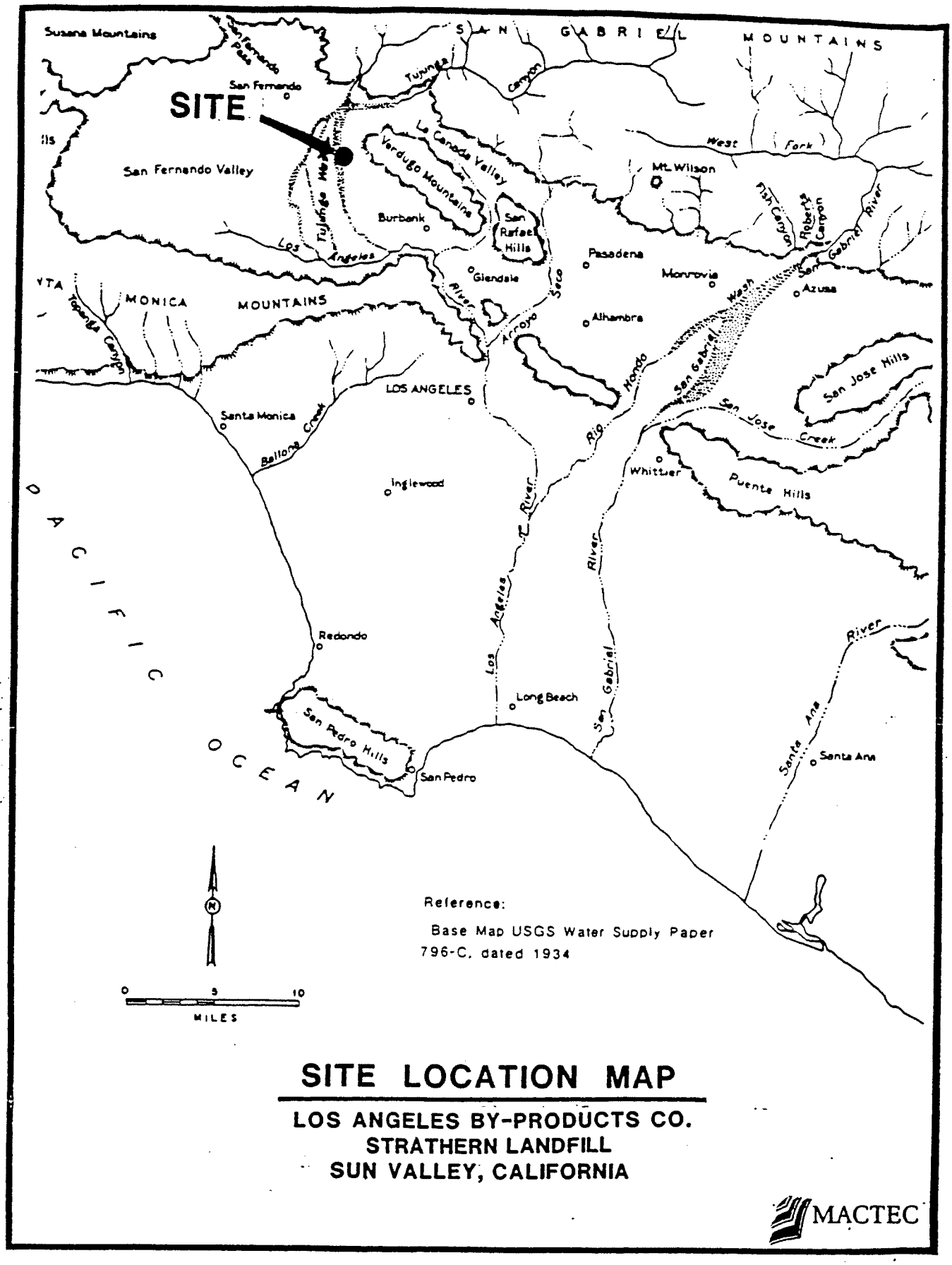
1 – Source: CCR, Title 22, Division 4, Chapter 15

** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

MACTEC

FIGURE 1

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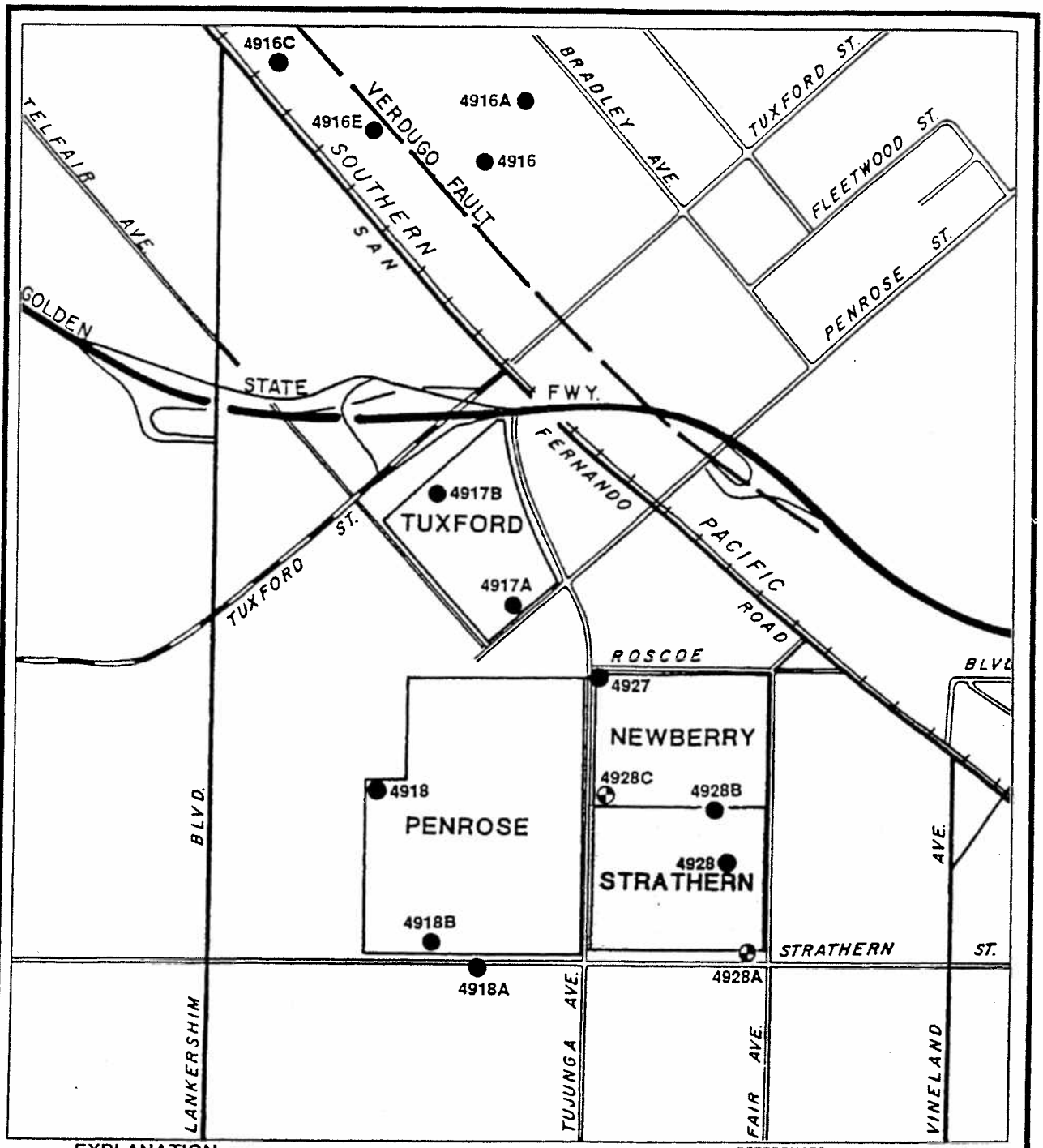
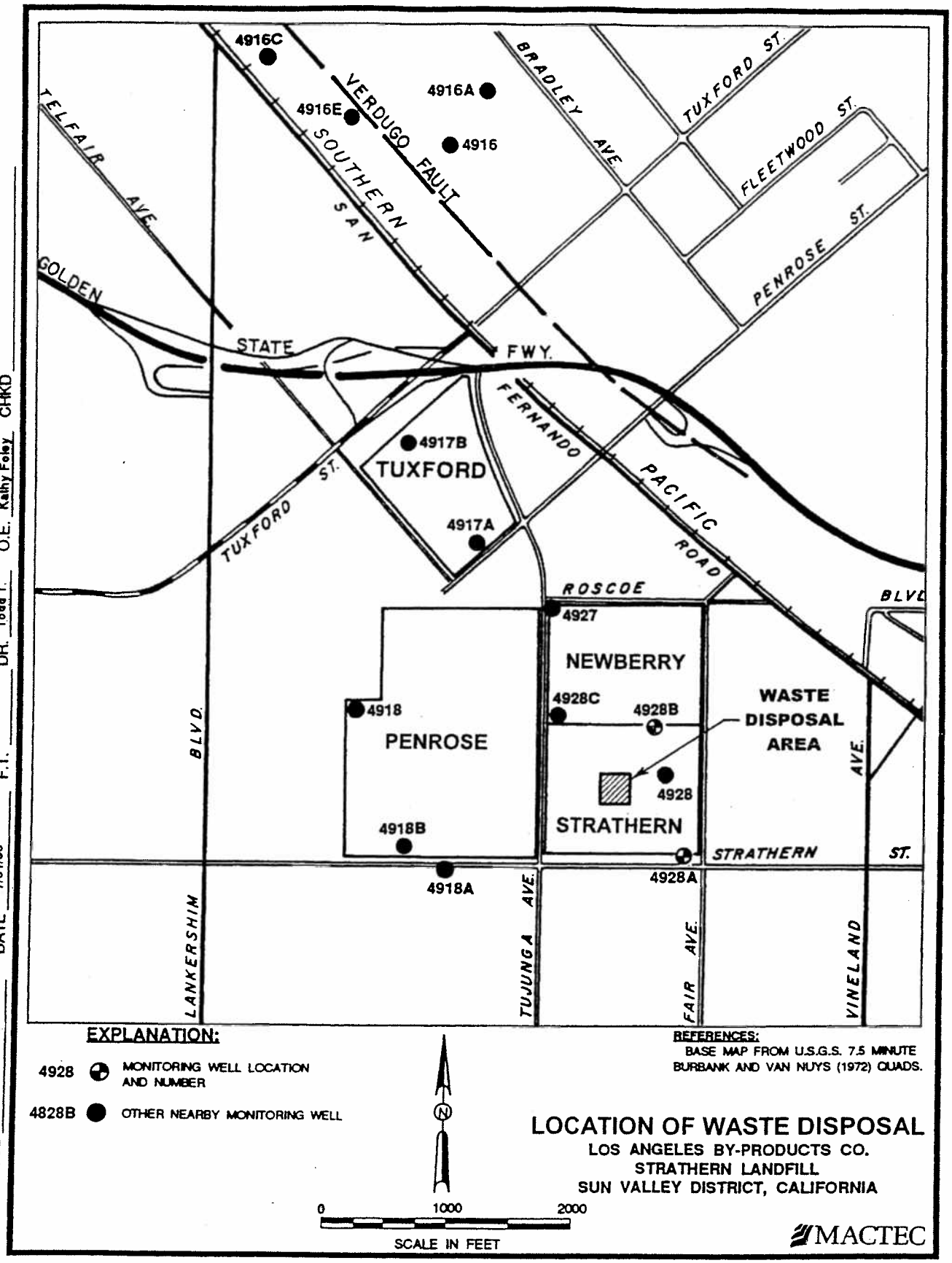


JOB 4951-03-3551 DATE 12/08/03 F.T. DR. ToddT. O.E. K.Foley CHKD SA

FIGURE 2



JOB 70111-2-0346 DATE 7/31/03 F.T. DR. Todd T. O.E. Kathy Foley CHKD

FIGURE 3

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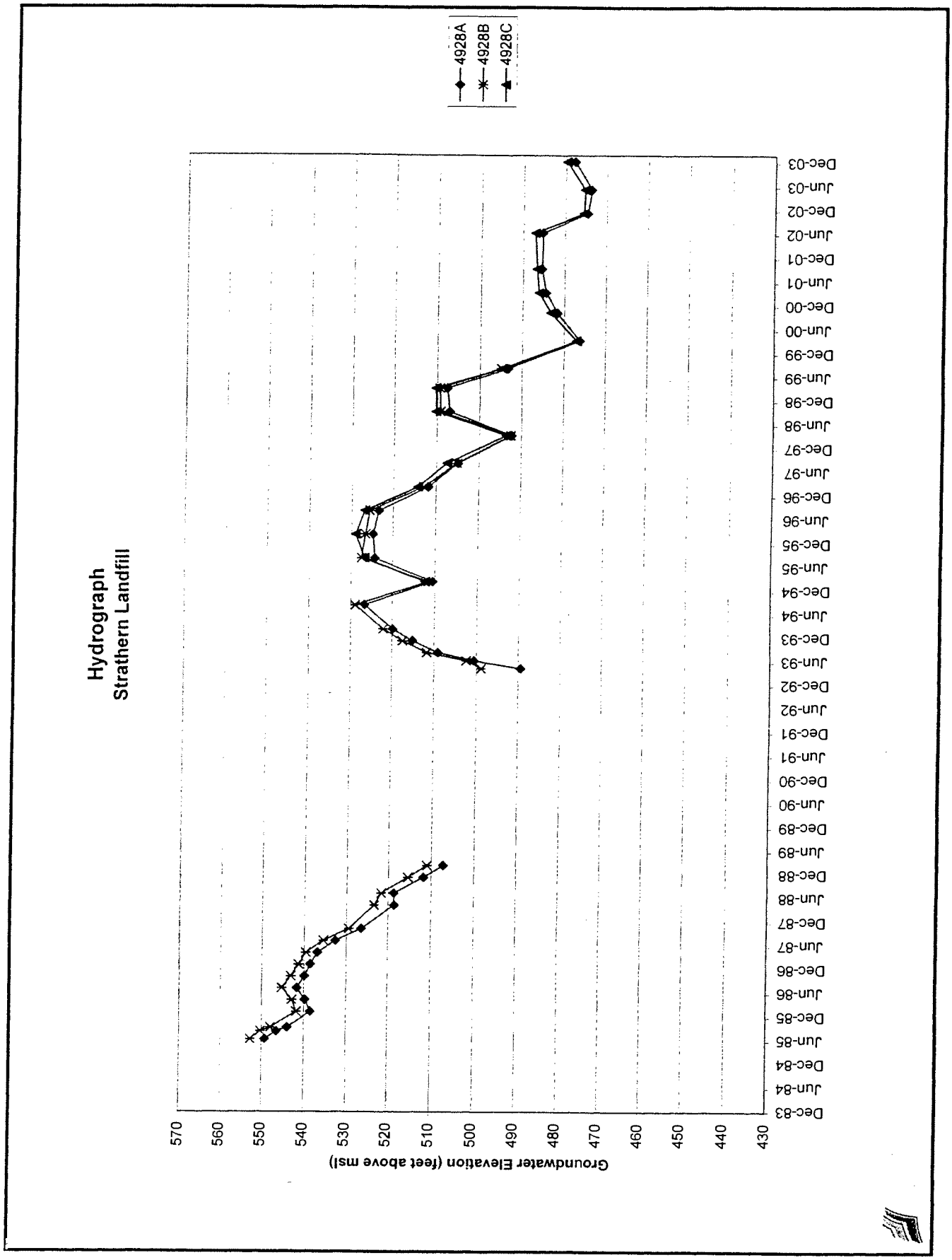

Figure 4

MACTEC Engineering and Consulting, Inc.

APPENDIX A

GROUNDWATER DATABASE

JOB 4951-03-3551 DATE 1-14-04 F.T. _____ DR. _____ O.E. SM CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL	FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT. W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs		6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	603.78							7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84							560	7.70	73	16	26	4.2	0.0	280
4928A	19-Jun-85	549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490
4928A	17-Jul-85	547.95	6.8	68	1160	102.0	480	1300	6.90	120	34	93	8.6	0.0	620
4928A	14-Aug-85	546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610
4928A	19-Sep-85	543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670
4928A	16-Jan-86	538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620
4928A	29-Apr-86	539.84	6.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488
4928A	22-Jul-86	541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0.0	390
4928A	15-Oct-86	539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490
4928A	14-Jan-87	538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590
4928A	15-Apr-87	536.86	5.8	69	1100	42.5	490	1500	6.80	170	44	85	6.6	<0.6	650
4928A	24-Jul-87	803.1 532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630
4928A	21-Oct-87	526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590
4928A	29-Apr-88	518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6.4	<0.6	480
4928A	28-Jul-88	518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442
4928A	08-Nov-88	511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370
4928A	07-Feb-89	603.78 507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350
4928A	02-Apr-93	489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320
4928A	22-Jun-93	500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290
4928A	24-Aug-93	509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290
4928A	19-Nov-93	515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290
4928A	21-Feb-94	519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430
4928A	05-Aug-94	526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330
4928A	20-Feb-95	510.49						830	8.90	97	25	36	5.3	<0.6	390
4928A	24-Aug-95	524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330
4928A	23-Feb-96	524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380
4928A	23-Aug-96	523.41													
4928A	11-Sep-96	NM													
4928A	31-Oct-96	516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97	511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390
4928A	26-Aug-97	504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400
4928A	12-Mar-98	492.23	7.30	68	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320
4928A	21-Sep-98	507.01	7.17	66	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358
4928A	30-Mar-99	507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324
4928A	25-Aug-99	493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332
4928A	10-Mar-00	476.16	7.25	64	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296
4928A	09-Oct-00	481.63	6.76	67	800	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286
4928A	29-Mar-01	484.40	7.44	65	733	28	378	733	7.34	87.1	22.1	32.1	5.3	<1	290
4928A	25-Sep-01	485.40	8.10	68	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288
4928A	05-Jun-02	485.26	7.65	66	766	26	363	761	7.20	88.6	24.1	34.5	15.8	<1	282
4928A	27-Nov-02	474.58	6.90	65	722	32	336	824	7.13	99.4	26.1	35.3	5.5	<1	280
4928A	30-May-03	473.67	7.31	67	664	33	348	720	7.26	81.4	21.1	29.5	4.59	<1	284
4928A	10-Dec-03		7.40	67	1300	35	530	1120	7.06	147	35.7	38.7	5.37	<1	464
4928A	08-Jan-04	477.78													

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JOB 4951-03-3557 DATE 1-19-04 F.T. _____ DR. _____ O.E. SA CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0 0	470
4928B	19-Jun-85		552 73	8 4	70	900	66 0	392	870	7.10	82	24	92	6.3	0 0	450
4928B	17-Jul-85		551.71	6.8	74	800	60 0	310	900	6 90	82	24	84	6 2	0 0	450
4928B	14-Aug-85		550 29	7.2	72	850	13.0		860	7 80	120	20	65	7 2	0 0	390
4928B	19-Sep-85		547 87	6 5	70	740	30 5	350	820	6 90	130	23	49	3 3	0 0	380
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7 20	107	22	36	4.4	0 0	340
4928B	29-Apr-86		542.86	6.7	71	520	18 0	255	600	8 00	120	17	30	5 2	0 0	341
4928B	22-Jul-86		545 14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0 0	290
4928B	15-Oct-86		543.10	6 0	68	690	33 5	255	680	7 60	87	10	29	4.2	0 0	280
4928B	14-Jan-87		541.32	6.7	66	500	16 5	240	700	7 30	88	21	35	4.2	0 0	340
4928B	15-Apr-87		539.63	6.2	65	450	25 0	250	680	7 00	80	22	33	4 0	<0 6	340
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7 40	87	25	36	4 3	<0 6	350
4928B	21-Oct-87		529.40	6 9	66	465	65 0	291	740	7 90	90	22	35	5.0	<0 6	370
4928B	29-Apr-88		523 37	8 6	66	455	25.0	260	710	7 80	82	31	31	4.2	<0 6	356
4928B	28-Jul-88	823 17	521.77	7.4	68	335	25 0	336	680	7 50	85	20	30	3.9	<0 6	350
4928B	08-Nov-88		515 47	7 3	66	680	20 0	400	740	7.20	83	25	51	4 7	<0 6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7 30	85	24	36	4.6	<0 6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	6.10	26	19	34	4.7	<0.6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7 00	70	26	39	6.2	<0 6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370
4928B	19-Nov-93		517.50	7.6	67 0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528 93	7.0	68.0	950		528	1000	6 80	130	35	39	6 0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7 10	120	34	39	5.5	<0.6	550
4928B	24-Aug-95		527 45	7.0	72.0	800	137	524	1100	7 00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6 5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6 90	160	43	46	6.1	<0.6	630
4928B	14-Feb-97		512.95	7 6	69.0	930	79	540	910	7 00	110	31	36	5.6	0	500
4928B	26-Aug-97		505.13	7.1	71 5	1120	88	560	1000	6 60	150	41	45	6.4	0	600
4928B	12-Mar-98		492.50	7 0	73 6	1152		502	1110	7 00	97	35	81	9	<2 0	502
4928B	21-Sep-98		509 2	7 3	69.6	835			1020	7 09	72	22	101	7 2	<2 0	438
4928B	30-Mar-99		509 34	6.9	72 6	1381		532	1310	7 13	154	<0 05	43 8	6 2	<2 0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6 86	116	34	46	4 8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													
4928B	25-Sep-01		DRY													
4928B	05-Jun-02		DRY													
4928B	27-Nov-02		DRY													

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JOB 4951-03-3551 DATE 1-19-04 F.T. _____ DR. _____ O.E. SH CHKD KE

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	30-May-03		DRY													
4928B	10-Dec-03		DRY													
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.16													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		476.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	75.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.8	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670
4928C	27-Nov-02		475.52													
4928C	30-May-03		475.27													
4928C	10-Dec-03			7.45	67.5	680	30	340	756	7.24	88.6	22.3	31.4	4.47	<1	290
4928C	08-Jan-04		479.70													

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JOB 4951-04-3551 DATE 1-14-04 F.T. _____ DR. _____ O.E. SA CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	15.0			650			1			1 0		0.70	10	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	18.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		600	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<6	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	46	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	67	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	26-Aug-97	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<6	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	75	33	53.1	0.4	348	476	5.4'	0.6	6.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928A	30-May-03	56.8	20.0	11.3	0.270	318	432	<5	0.7	7.0	<0.25	<0.25	<10	0.014'	0.215	<50	<10	AETL
4928A	10-Dec-03	60.4	63	27.9	0.512	575	685	13.7	0.4'	4.5	<0.25	<0.25	<5	12'	<0.02	<15	<10	AETL
4928A	08-Jan-04																	

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JOB 4951-03-3551 DATE 1-14-04 F.T. _____ DR. _____ O.E. SA CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	61	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	16-Jan-86	28	25	26.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-86	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-86	60	35	15.0	0.3		440	<0.05	<1	<1			<10		0.29	<20		B&C
4928B	14-Jan-87	51	18	5.3	0.5		420	0.10	<1	2			<10		<0.03	<20	<0.06	B&C
4928B	15-Apr-87	54	18	6.6	0.4		410	0.08	<1	2			<10		0.88	<10	<0.04	B&C
4928B	24-Jul-87	50	24	6.8			430	<0.05	<1	4			<20		<0.02	<20	<0.04	B&C
4928B	21-Oct-87	50	21	6.4	0.25		430	<0.05	<1	<1			<20		0.20	<10	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7.0	<1	3			<20		5.70	13	<0.004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	6.0	<1	4			<1		<0.02	<2	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0.16		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89	56	17	3.9	<0.02		400	<5	1	5			<1		2.20	3	<0.04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0.5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1.7			1		14	24	<0.04	B&C
4928B	24-Aug-93	46	17	3.4			390	<6	<1	2.0			<1		17	18	<0.04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0.5	1.4			<1		82	3	<0.04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0.5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0.27		600		1.1	2.7			<3		7.9	17	<0.005	B&C
4928B	20-Feb-95	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<5	<10	2.4	16	<0.04	B&C
4928B	24-Aug-95	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2.6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0.31		760		1.4	5.6			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	26-Aug-97	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		802	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98	57	39	6.2	0.3		618	<6	<0.5	1.6			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99	53	55	1.3	0.3		789	<6.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99	67	40	6.6	0.3		754	<6.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	
4928B	25-Sep-01																	
4928B	05-Jun-02																	
4928B	27-Nov-02																	

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JOB 1951-04-3551 DATE 1-14-04 F.T. _____ DR. _____ O.E. SA CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 4951-03-3551.01

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB SOURCE
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	30-May-03																	
4928B	10-Dec-03																	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02																	
4928C	30-May-03																	
4928C	10-Dec-03	62.8	31	21.7	0.285	332	456	12.4	0.8	6.4	<0.25	<0.25	<5	<10	<0.02	<15	<10	AETL
4928C	08-Jan-04																	

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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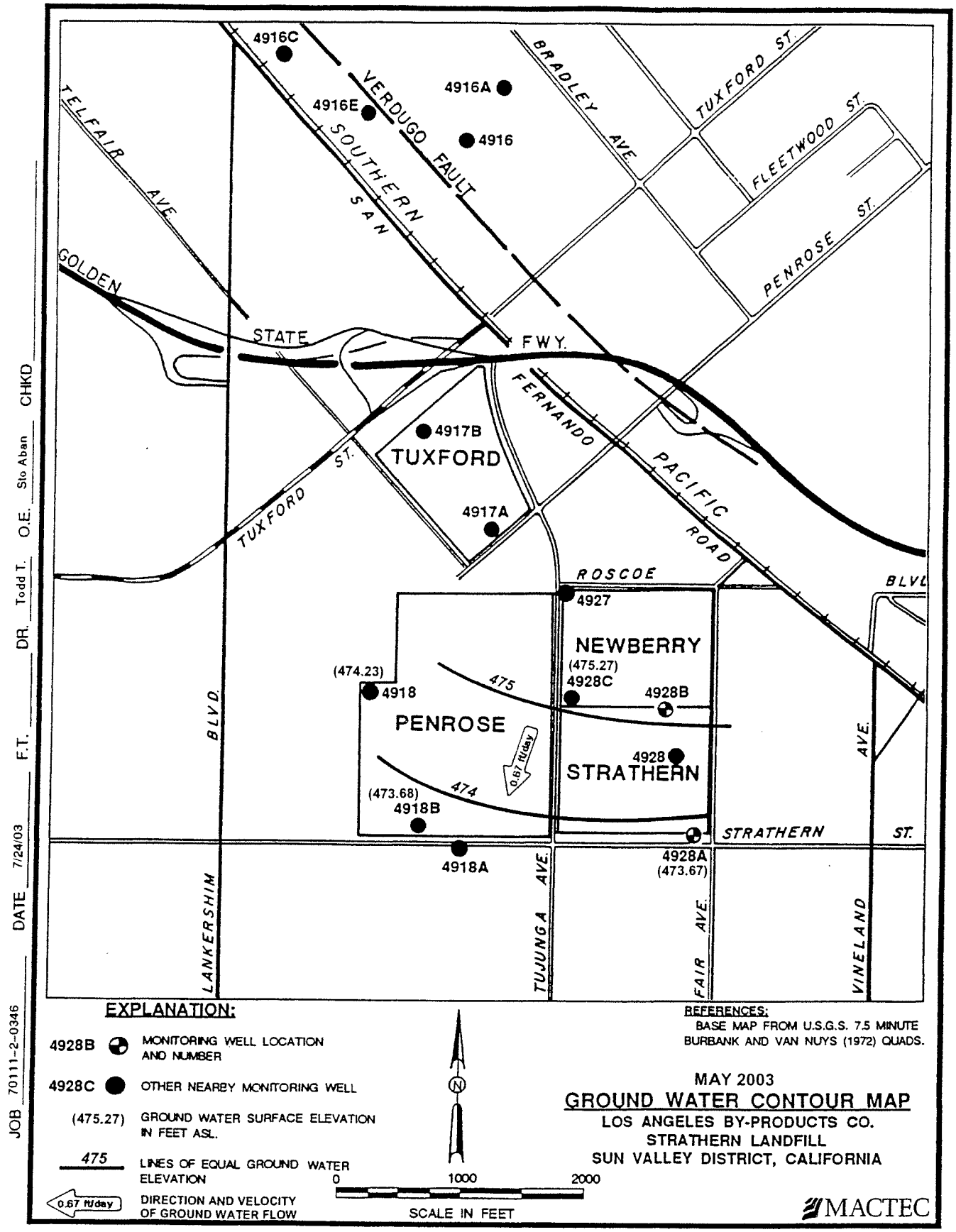
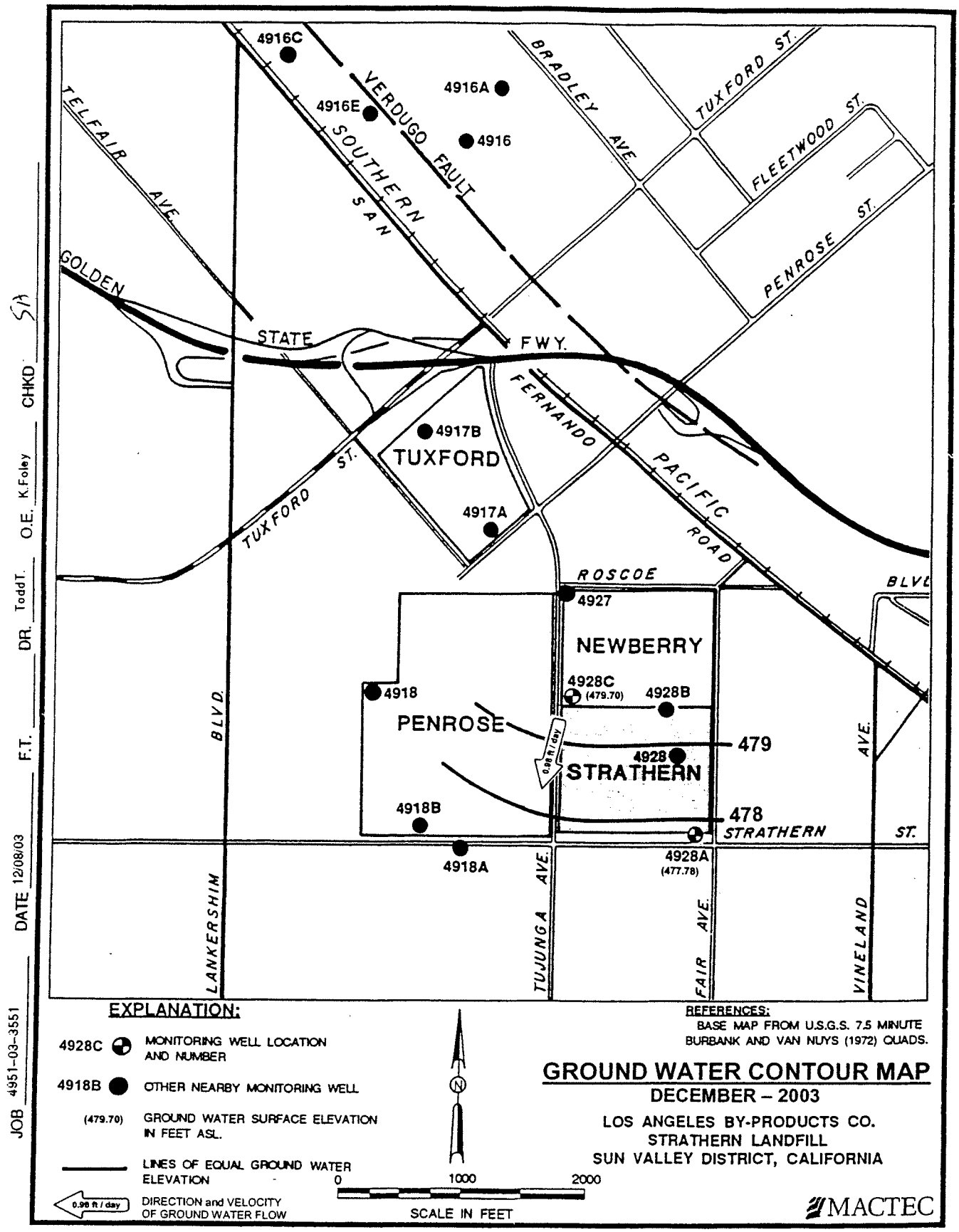
APPENDIX B

GROUNDWATER CONTOUR MAPS


4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
F.W.Y.
FERNANDO
PACIFIC
ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE
BLVD.
4927
NEWBERRY
(475.27)
4928C
4928B
(474.23)
4918
475
PENROSE
0.67 ft/day
4928
STRATHERN
474
(473.68)
4918B
4918A
4928A
(473.67)
STRATHERN ST.
AVE.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
EXPLANATION:
4928B MONITORING WELL LOCATION AND NUMBER
4928C OTHER NEARBY MONITORING WELL
(475.27) GROUND WATER SURFACE ELEVATION IN FEET ASL.
475 LINES OF EQUAL GROUND WATER ELEVATION
0.67 ft/day DIRECTION AND VELOCITY OF GROUND WATER FLOW
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MAY 2003
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC
JOB 70111-2-0346 DATE 7/24/03 F.T. DR. Todd T. O.E. Sto Aban CHKD


4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE
FWY.
FERNANDO
4917B
TUXFORD
4917A
TUXFORD ST.
PACIFIC ROAD
ROSCOE
BLVD
4927
NEWBERRY
4928C
(479.70)
4928B
4918
PENROSE
0.98 ft / day
479
4928
STRATHERN
AVE.
4918B
478
STRATHERN
ST.
4928A
(477.78)
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
EXPLANATION:
4928C MONITORING WELL LOCATION AND NUMBER
4918B OTHER NEARBY MONITORING WELL
(479.70) GROUND WATER SURFACE ELEVATION IN FEET ASL.
LINES OF EQUAL GROUND WATER ELEVATION
0.98 ft / day DIRECTION and VELOCITY OF GROUND WATER FLOW
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
GROUND WATER CONTOUR MAP
DECEMBER – 2003
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC
JOB 4951-03-3551
DATE 12/08/03
F.T.
DR. ToddT.
O.E. K.Foley
CHKD SA

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Kathy Foley

Number of Pages 14
Date Received 12/10/2003
Date Reported 12/31/2003

Job Number	Order Date	Client
27188	12/10/2003	LC

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill
Site: Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

CHAIN OF CUSTODY RECORD

Nº 30780

COMPANY: MACTEC
PHONE: 323-889-5300
PROJECT MANAGER: KATHY FOLEY
FAX: 323-721-6700
PROJECT NAME: Strattern Landfill
PROJECT #: 4951-03-3551.01
SITE NAME AND ADDRESS: Sun Valley, CA
AETL JOB No.: 27188
Page 1 of 1

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	pH, EC, CO_2	General Minerals	Total Hardness as CaCO	Boron	524.2	Cd, Cr, Ni, Pb	COD	TEST INSTRUCTIONS & COMMENTS
1	4928A	27188.01	12/10/03	1130	W	5	Cooler	X	X	X	X	X	X	X	Dissolved metals – please filter samples first.
2	4928B C	27188.02	12/10/03	1200	W	5	Cooler	X	X	X	X	X	X	X	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	10	PROPERLY COOLED (Y) / N / NA	
CUSTODY SEALS Y / (N) / NA		SAMPLES INTACT (Y) / N / NA	
RECEIVED IN GOOD COND (Y) / N		SAMPLES ACCEPTED (Y) / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:	Signature:	Signature:
Printed Name: MIKE ENGLE	Printed Name:	Printed Name:
Date: 12-10-03 Time: 13:00	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name: J HUNT
Date: Time:	Date: Time:	Date: 12-10-03 Time: 13:00

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

0031114

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley, CA

Telephone: (323)889-5300
Attn: Kathy Foley

Page: 2
Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121203

Our Lab I.D.				27188.01	27188.02		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled				12/10/2003	12/10/2003		
Date Prepared			12/12/2003	12/10/2003	12/10/2003		
Preparation Method			5035A	5035A	5035A		
Date Analyzed			12/12/2003	12/12/2003	12/12/2003		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Acetone	0.5	1.0	ND	ND	ND		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
2-Butanone (MEK)	0.5	1.0	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon Disulfide	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
2-Chloroethyl vinyl ether	0.5	1.0	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.25	0.50	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.25	0.50	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

Page: 3
Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submittd	Client
27188	12/10/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121203

Our Lab I.D.				27188.01	27188.02		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled				12/10/2003	12/10/2003		
Date Prepared			12/12/2003	12/10/2003	12/10/2003		
Preparation Method			5035A	5035A	5035A		
Date Analyzed			12/12/2003	12/12/2003	12/12/2003		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	5.7	4.4		
1,1-Dichloroethane	0.25	0.50	ND	1.3	2.4		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	1.8	ND		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	ND	0.4J		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
2-Hexanone	0.5	1.0	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
4-Methyl-2-pentanone (MIBK)	0.5	1.0	ND	ND	ND		
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.25	0.50	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	4.5	6.4		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,2,4-Trichlorobenzene	0.25	0.50	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.4J	0.8		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submittd	Client
27188	12/10/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 121203

Our Lab I.D.				27188.01	27188.02		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled				12/10/2003	12/10/2003		
Date Prepared			12/12/2003	12/10/2003	12/10/2003		
Preparation Method			5035A	5035A	5035A		
Date Analyzed			12/12/2003	12/12/2003	12/12/2003		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,2,3-Trichloropropane	0.25	0.50	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl Acetate	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-Xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		
Total trihalomethane compounds	0.25	0.50	ND	ND	ND		

Our Lab I.D.				27188.01	27188.02		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
Bromofluorobenzene	75-125		87	113	102		
1,2-Dichlorobenzene	75-125		90	107	89		

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: 200.7, Metals

QC Batch No: 121103

Our Lab I.D.				27188.01	27188.02		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled				12/10/2003	12/10/2003		
Date Prepared			12/11/2003	12/11/2003	12/11/2003		
Preparation Method			200.2	200.2	200.2		
Date Analyzed			12/11/2003	12/11/2003	12/11/2003		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Cadmium	0.005	0.050	ND	ND	ND		
Chromium	0.01	0.05	ND	0.012J	ND		
Lead	0.015	0.100	ND	ND	ND		
Nickel	0.01	0.05	ND	ND	ND		

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Our Lab I.D.							N/A	27188.01	27188.02
Client Sample I.D.							Method Blank	4928A	4928C
Date Sampled							12/10/2003	12/10/2003	12/10/2003
Matrix							Aqueous	Aqueous	Aqueous
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	**Results**
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	12/17/2003	ND	13.7	12.4
Carbon dioxide (Dissolved)	1	SM-4500-CO2	mg/L	1.0	2.0	12/10/2003	ND	58.1	29.9
Boron	1	SM-4500B	mg/L	0.1	0.2	12/17/2003	ND	0.512	0.285

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: GEN.-MINERALS, General Minerals

QC Batch No: 121003

Our Lab I.D.				27188.01	27188.02		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled				12/10/2003	12/10/2003		
Date Prepared			12/10/2003	12/10/2003	12/10/2003		
Preparation Method			Various	Various	Various		
Date Analyzed			12/15/2003	12/15/2003	12/15/2003		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bicarbonate (as CaCO3)	1	2	ND	464	290		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	464	290		
Anions Total (meq/L)	0.01	0.01	NA	12.78	8.36		
Cations Total (meq/L)	0.01	0.01	NA	12.15	7.77		
Ion Balance (percent difference)	0.01	0.01	NA	2.53	3.66		
Nitrate	0.05	0.10	ND	27.9	21.7		
Nitrite	0.01	0.02	ND	0.10	ND		
Chloride (Cl), Total	0.5	1.0	ND	63	31		
Conductivity (umhos/cm @77F)	5	10	ND	1,120	756		
Fluoride, Total	0.1	0.2	ND	0.40	0.51		
Hardness (Ca,Mg) as CaCO3	1	2	ND	575	332		
pH (pH units)	0.01	0.01	NA	7.06	7.24		
Sulfate	5	10	ND	60.4	62.8		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	685	456		
Aluminum	0.05	0.10	ND	ND	ND		
Calcium	0.25	0.50	ND	147	88.6		
Copper	0.01	0.02	ND	ND	ND		
Iron	0.02	0.05	ND	ND	ND		
Magnesium	0.25	0.50	ND	35.7	22.3		
Manganese	0.005	0.010	ND	ND	ND		
Potassium	0.5	1.0	ND	5.37	4.47		
Sodium	0.25	0.50	ND	38.7	31.4		
Zinc	0.015	0.030	ND	0.580	0.158		

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch No: 121103 Sample Spiked: 27123.06 QC Prepared: 12/11/2003 QC Analyzed: 12/11/2003 Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	ND	1.00	0.98	98	1.00	0.96	96	2.1	80-120	<15
Chromium	ND	1.00	0.96	96	1.00	0.95	95	1.0	80-120	<15
Lead	ND	1.00	0.99	99	1.00	0.94	94	5.2	80-120	<15
Nickel	ND	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15

QC Batch No: 121103 Sample Spiked: 27123.06 QC Prepared: 12/11/2003 QC Analyzed: 12/11/2003 Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	1.00	100	80-120
Chromium	1.00	0.98	98	80-120
Lead	1.00	1.02	102	80-120
Nickel	1.00	1.02	102	80-120

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 121703 Sample Spiked: 27188.02 QC Prepared: 12/17/2003 QC Analyzed: 12/17/2003 Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	12.4	50.00	62.40	100	50.00	63.65	102	2.0	80-120	<15

QC Batch No: 121703 Sample Spiked: 27188.02 QC Prepared: 12/17/2003 QC Analyzed: 12/17/2003 Units: ppm

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Chemical Oxygen Demand	13.7	12.9	6.0	<15	50.00	51.00	102	80-120

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: 524.2, Volatile Organic Compounds by GC/MS
QUALITY CONTROL REPORT

QC Batch No: 121203 Sample Spiked: 121203 QC Prepared: 12/12/2003 QC Analyzed: 12/12/2003 Units: ppb

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	25.00	23.00	92	25.00	22.75	91	1.1	75-125	<20
Chlorobenzene	25.00	26.50	106	25.00	24.50	98	7.8	75-125	<20
Chloroform (Trichloromethane)	25.00	23.75	95	25.00	22.25	89	6.5	75-125	<20
1,1-Dichloroethene	25.00	22.75	91	25.00	23.75	95	4.3	75-125	<20
Ethylbenzene	25.00	28.50	114	25.00	26.75	107	6.3	75-125	<20
Methyl-tert-butyl ether (MTBE)	25.00	23.50	94	25.00	27.25	109	14.8	75-125	<20
Toluene (Methyl benzene)	25.00	26.00	104	25.00	24.00	96	8.0	75-125	<20
1,1,1-Trichloroethane	25.00	27.00	108	25.00	29.25	117	8.0	75-125	<20
Trichloroethene	25.00	23.25	93	25.00	25.25	101	8.2	75-125	<20
o-Xylene	25.00	23.25	93	25.00	25.25	101	8.2	75-125	<20
m,p-Xylenes	50.00	50.50	101	50.00	49.50	99	2.0	75-125	<20

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: GEN.-MINERALS, General Minerals

QUALITY CONTROL REPORT

QC Batch No: 121003 Sample Spiked: 121003 QC Prepared: 12/15/2003 QC Analyzed: 12/15/2003 Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	290	20.00	310.00	100	20.00	310.00	100	<1	80-120	<15
Total Alkalinity	290	20.00	310.00	100	20.00	310.00	100	<1	80-120	<15
Nitrate	21.7	2.20	23.66	99	2.20	22.71	95	4.1	80-120	<15
Nitrite	ND	0.60	0.60	100	0.60	0.61	102	2.0	80-120	<15
Chloride (Cl), Total	18	20.00	38.00	100	20.00	38.00	100	<1	80-120	<15
Fluoride, Total	0.51	1.00	1.49	99	1.00	1.57	104	4.9	80-120	<15
Hardness (Ca,Mg) as CaCO3	332	20.00	352.00	100	20.00	352.00	100	<1	80-120	<15
Sulfate	190	20.00	203.70	97	20.00	212.10	101	4.0	80-120	<15
Surfactants (MBAS)	ND	0.20	0.19	94	0.20	0.19	95	1.1	80-120	<15
Aluminum	ND	1.00	1.01	101	1.00	0.99	99	2.0	80-120	<15
Calcium	0.151	1.00	1.14	99	1.00	1.12	97	2.0	80-120	<15
Copper	ND	1.00	0.99	99	1.00	0.99	99	<1	80-120	<15
Iron	ND	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15
Magnesium	ND	1.00	0.99	99	1.00	0.96	96	3.1	80-120	<15
Manganese	ND	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15
Potassium	19.0	10.00	28.13	97	10.00	28.13	97	<1	80-120	<15
Sodium	26.3	1.00	28.12	103	1.00	27.30	100	3.0	80-120	<15
Zinc	ND	1.00	0.99	99	1.00	0.97	97	2.0	80-120	<15

QC Batch No: 121003 Sample Spiked: 121003 QC Prepared: 12/15/2003 QC Analyzed: 12/15/2003 Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Nitrate	2.20	2.22	101	80-120
Nitrite	0.60	0.59	99	80-120
Chloride (Cl), Total	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Fluoride, Total	1.00	1.04	104	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120

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ANALYTICAL RESULTS

Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submittd	Client
27188	12/10/2003	LC

Method: GEN.-MINERALS, General Minerals

QC Batch No: 121003 Sample Spiked: 121003 QC Prepared: 12/15/2003 QC Analyzed: 12/15/2003 Units: ppm

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
pH (pH units)	7.00	7.00	100	80-120
Sulfate	20.00	20.20	101	80-120
Surfactants (MBAS)	0.20	0.19	97	80-120
Total Dissolved Solids	100.00	101.00	101	80-120
Aluminum	1.00	1.05	105	80-120
Calcium	1.00	1.03	103	80-120
Copper	1.00	1.00	100	80-120
Iron	1.00	0.98	98	80-120
Magnesium	1.00	1.01	101	80-120
Manganese	1.00	1.00	100	80-120
Potassium	10.00	9.60	96	80-120
Sodium	1.00	1.03	103	80-120
Zinc	1.00	1.00	100	80-120

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: SM-4500-CO2, Carbon Dioxide (Titrimetric, Standard Methods 19th Ed.)

QUALITY CONTROL REPORT

QC Batch No: 121003 Sample Spiked: 27181.01 QC Prepared: 12/10/2003 QC Analyzed: 12/10/2003 Units: ppm

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit
Carbon dioxide (Dissolved)	58.1	57.2	1.6	<20

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Project ID: 4951-03-3551.01
Project Name: Strathern Landfill

AETL Job Number	Submitted	Client
27188	12/10/2003	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 121703 Sample Spiked: 27188.02 QC Prepared: 12/17/2003 QC Analyzed: 12/17/2003 Units: ppm

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.285	0.50	0.75	96	0.50	0.75	95	1.0	80-120	<15

QC Batch No: 121703 Sample Spiked: 27188.02 QC Prepared: 12/17/2003 QC Analyzed: 12/17/2003 Units: ppm

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Boron	0.512	0.500	2.4	<15	0.50	0.48	96	80-120

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Data Qualifiers and Descriptors

Data Qualifier:

*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can

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Data Qualifiers and Descriptors

be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.

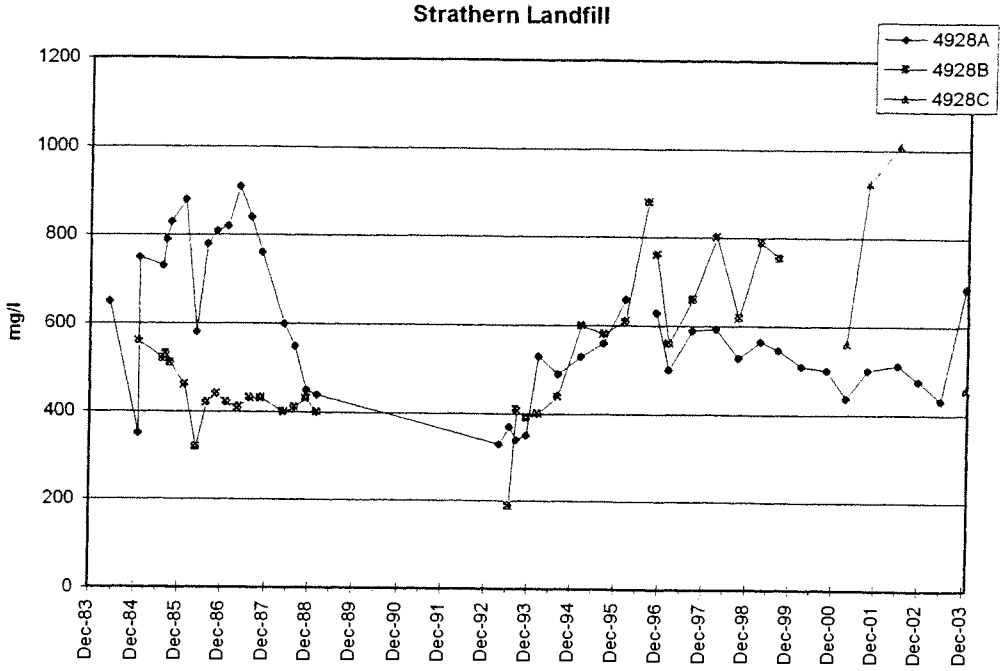
Recov: Recovered concentration in the sample.

RPD: Relative Percent Difference

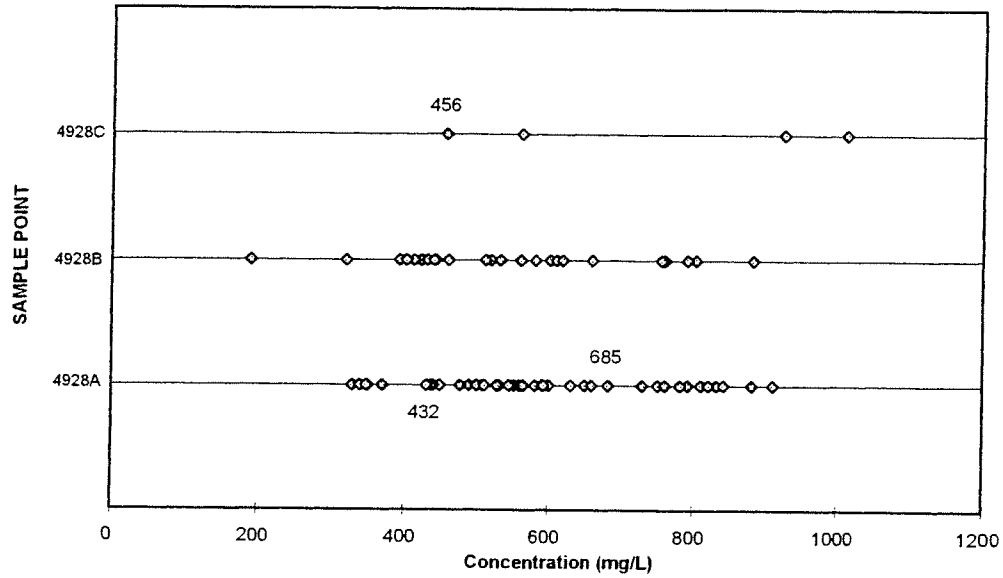
APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

Total Dissolved Solids History
Strathern Landfill



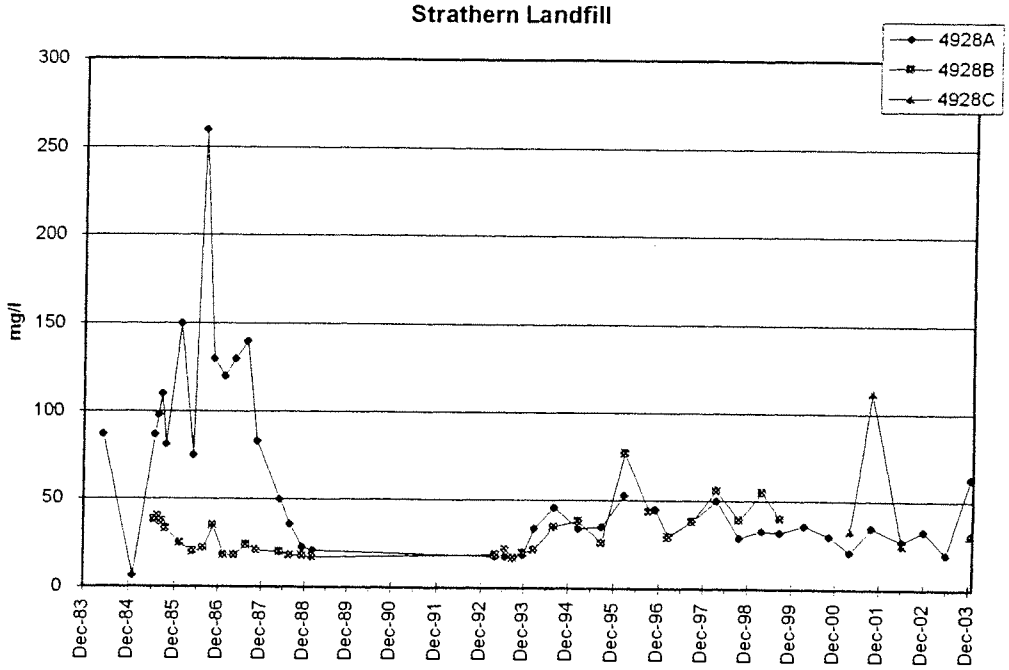
Total Dissolved Solids
Statistical Distribution



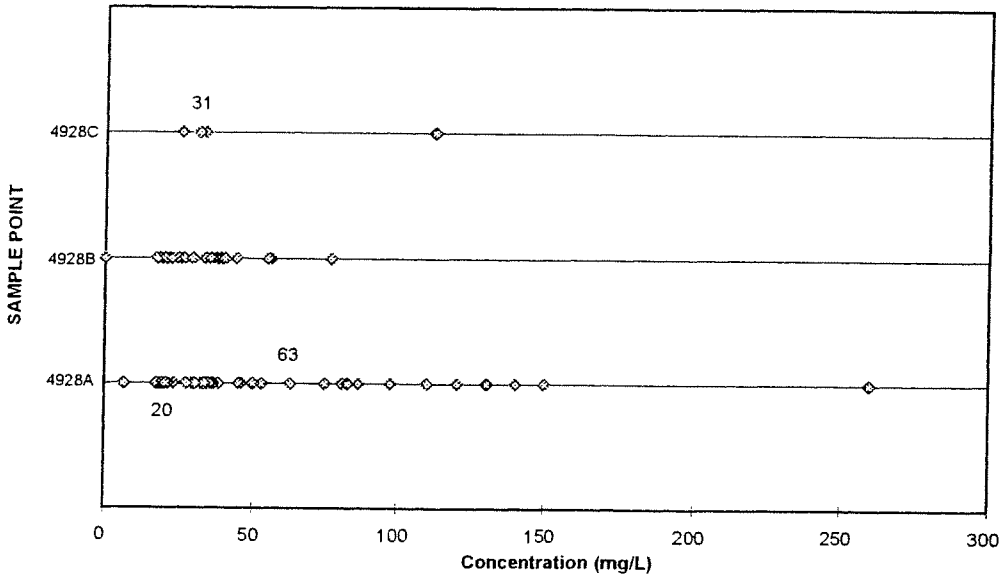
Data labels are for 2003 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC Engineering and Consulting, Inc.

Chloride History
Strathern Landfill



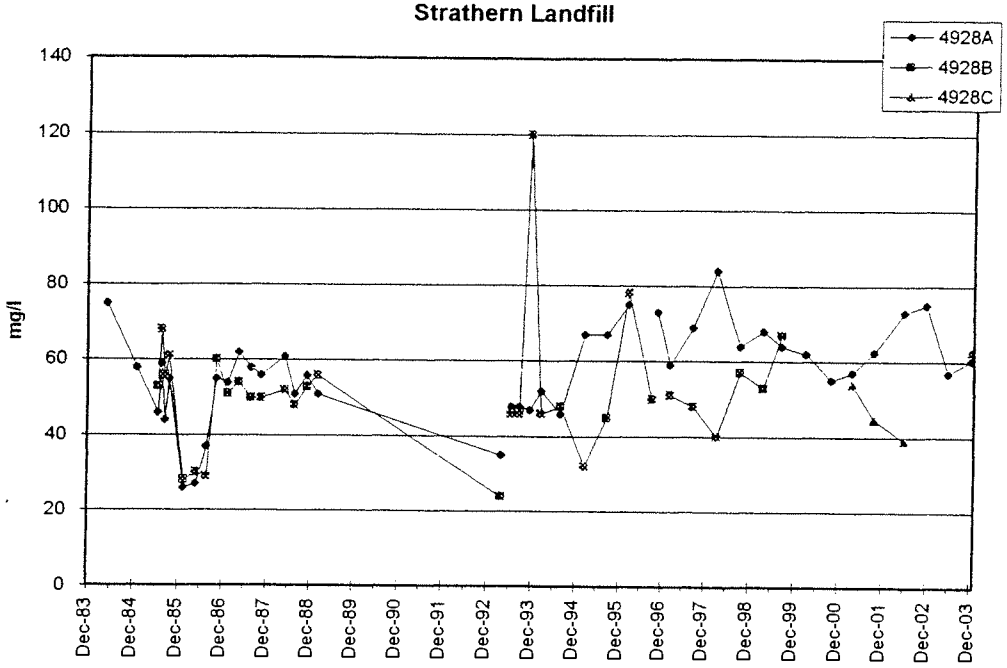
Chloride
Statistical Distribution



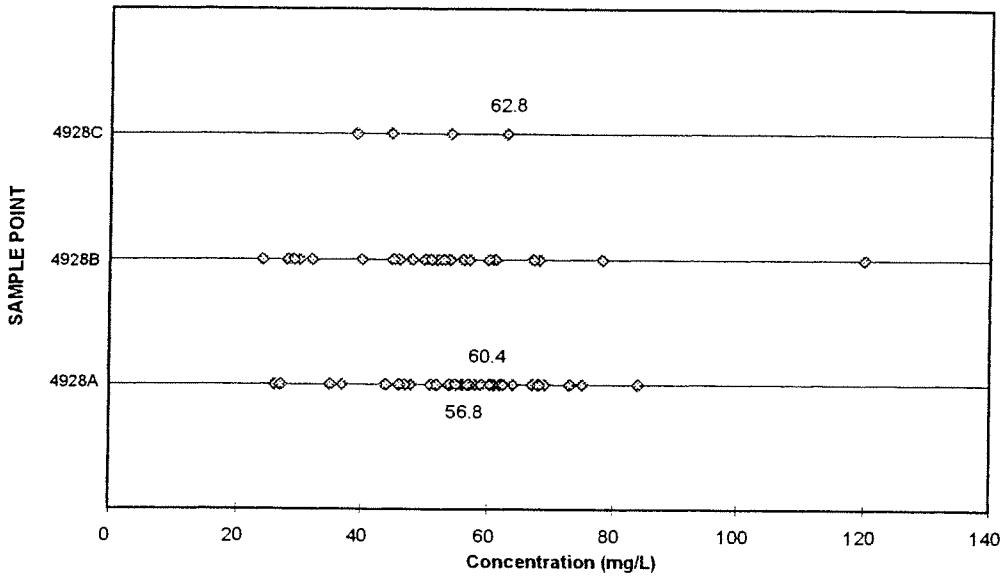
Data labels are for 2003 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC Engineering and Consulting, Inc.

Sulfate History
Strathern Landfill



Sulfate
Statistical Distribution



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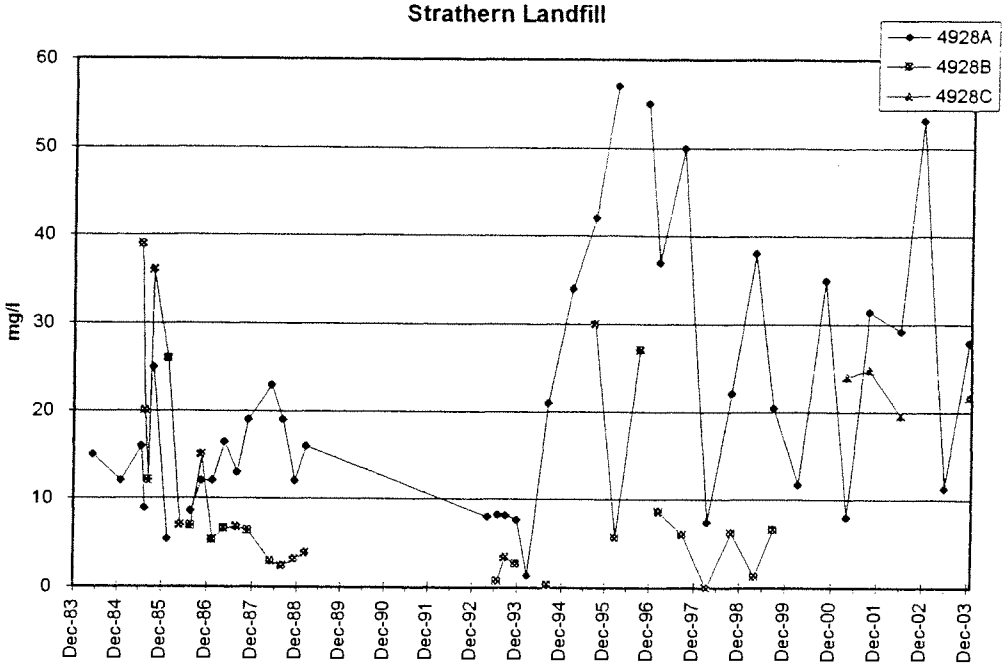
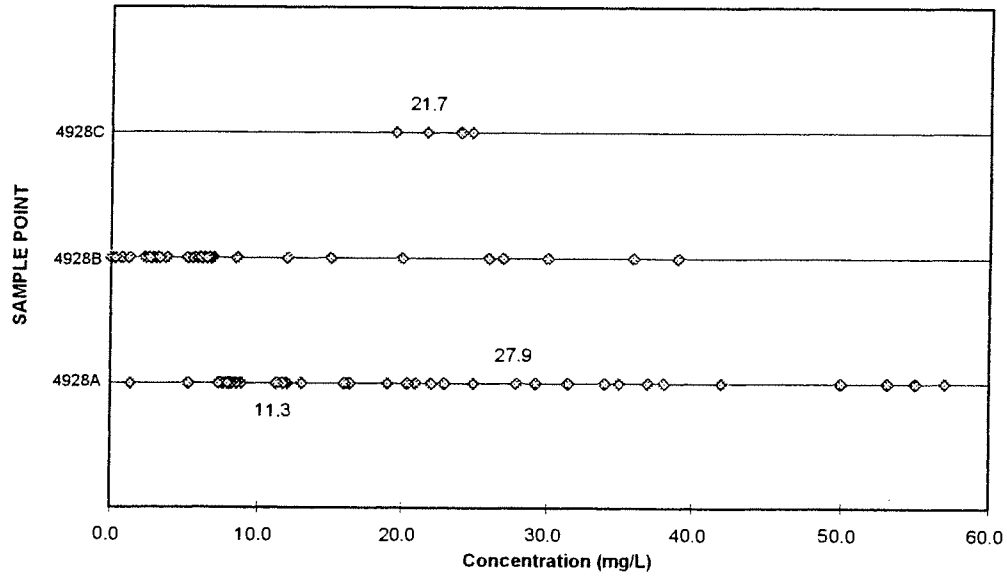
MACTEC Engineering and Consulting, Inc.

Nitrate History
Strathern Landfill



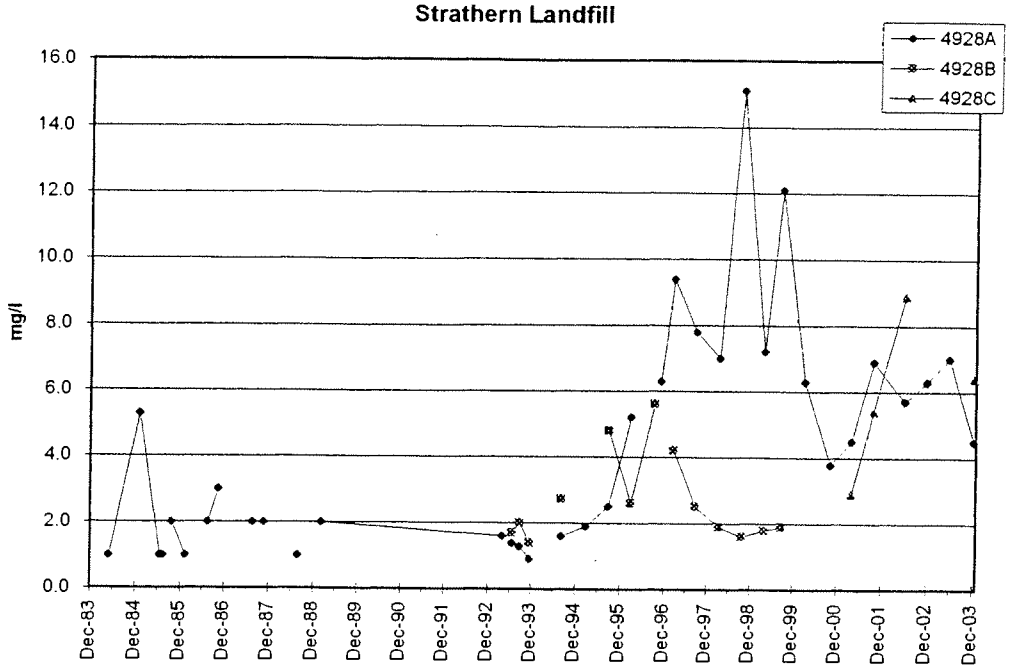
Nitrate
Statistical Distribution



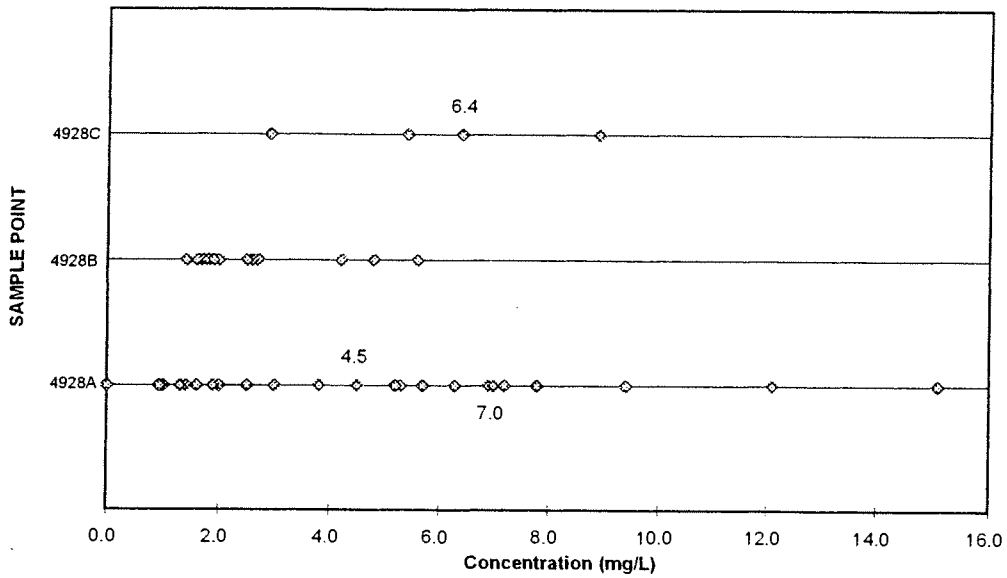
Data labels are for 2003 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC Engineering and Consulting, Inc.

PCE History
Strathern Landfill



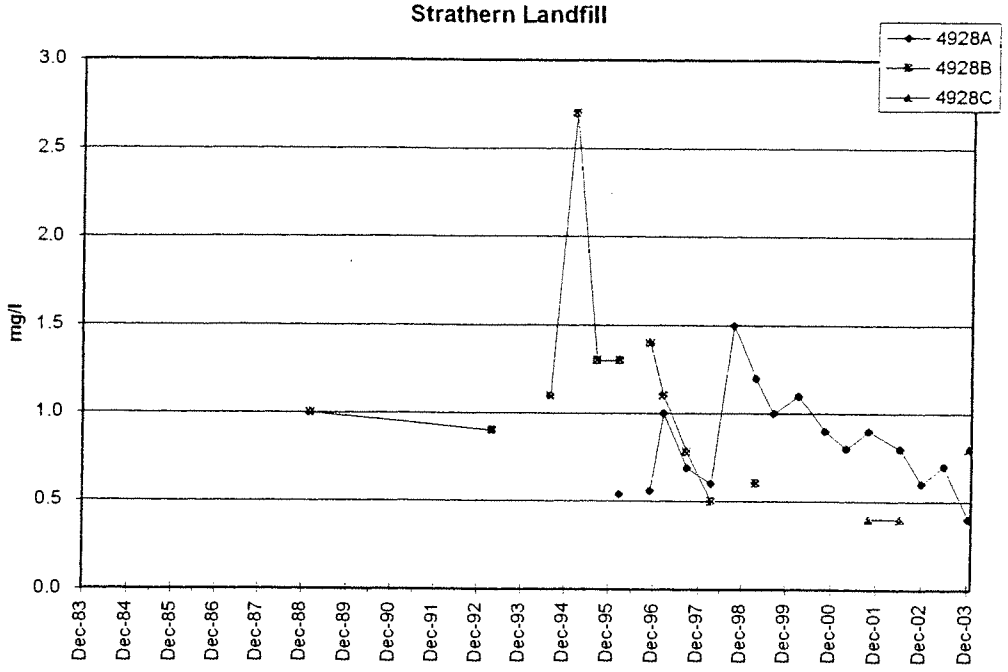
PCE
Statistical Distribution



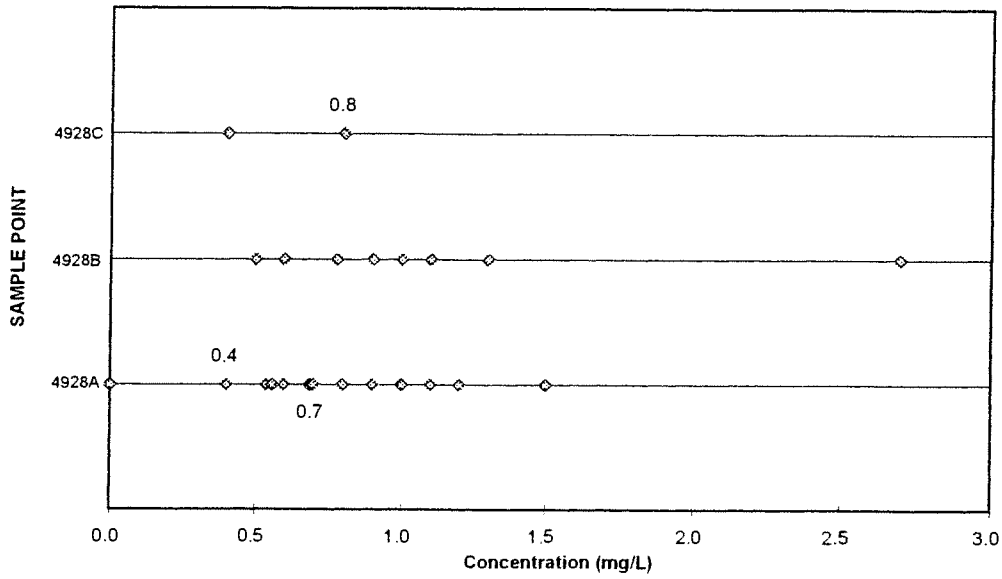
Data labels are for 2003 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC Engineering and Consulting, Inc.

TCE History
Strathern Landfill



TCE
Statistical Distribution



Data labels are for 2003 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC Engineering and Consulting, Inc.

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FOURTH QUARTER AND 2002 ANNUAL GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

MACTEC

Los Angeles, California

MACTEC Project 7011120346.0001

February 4, 2003

003137

MACTEC

February 4, 2003

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Fourth Quarter and 2002 Annual Groundwater Monitoring Report**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
MACTEC Project 7011120346.0001

INTRODUCTORY SUMMARY

This report is an of the fourth quarter and annual summary 2002 groundwater monitoring and waste disposal activities at the Los Angeles By-Products Company's Strathern Landfill. MACTEC Engineering and Consulting of Georgia, Inc. (MACTEC), f/k/a/ Law/Crandall, a division of Law Engineering and Environmental Services, Inc. monitors the groundwater levels and groundwater quality at Strathern Landfill. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting on waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring was done during the first and third quarters by MACTEC, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, on October 30, 2001, Mr. Dana Cole of the Regional Water Quality Control Board (RWQCB) requested that monitoring be done during the second and fourth quarters, and that reporting of waste disposal quantities be combined with the groundwater monitoring report. This monitoring report contains the results of the second and fourth quarter 2002 groundwater-monitoring and waste disposal.

Groundwater levels at the monitoring wells remained constant between the third quarter 2001 and first quarter 2002. Between the first and third quarters 2002, groundwater levels decreased approximately seven feet due to low precipitation received during the latter winter and spring months. However, due to the decrease in regional groundwater levels over the past few years, the

MACTEC Engineering and Consulting, Inc.
200 Citadel Drive • Los Angeles, CA 90040
323-889-5300 • Fax: 323-721-6700

site's upgradient well 4928B was dry during the first and third quarter 2002 monitoring events. Therefore on March 23, 2001, we requested and received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Due to low regional groundwater levels during fourth quarter, well 4928C water level was too low to pump water to the surface for sampling.

The analytical results of monitoring show that groundwater from 4928A are historically similar in 2002 and previous quarters. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS) in well 4928A and 4928C during June 2002. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) of 8.9 parts per billion (ppb) in well 4928C during June 2002 and 5.7 and 6.3 ppb, respectively, in well 4928A during June and November 2002. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

MACTEC measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

MACTEC prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 2002 groundwater-monitoring program. MACTEC collected groundwater samples in June and November of 2002 and prepared this report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

RESULTS

This section presents the monitoring results including waste disposal, groundwater levels, and groundwater quality.

WASTE DISPOSAL

Strathern Landfill accepts inert fill consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. During the fourth quarter 2002, Los Angeles By-Products received about 87,138 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of

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wastes deposited during the first quarter. Figure 3 shows the approximate location of waste disposal during the first quarter of 2002. The remaining capacity of the Strathern Landfill is about 5.3 million tons. The estimated remaining life of the site is 9.29 years.

The waste tonnage recorded in this report has been attested to, and certified by the President of Los Angeles By-Products Company. The certification of deposited waste is attached to the end of this report.

GROUNDWATER LEVELS

MACTEC measured groundwater levels in June and November 2002. Groundwater levels remained the same between the third quarter 2001 and first quarter 2002. Between June and November 2002, groundwater levels decreased seven feet in the monitoring wells. During the first and third quarter 2002 well 4928B was dry. During 2002, groundwater levels remained near the site's historic low groundwater surface levels. This is maybe related to the past few dry summer seasons and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 1,903 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from October 2001 through September 2002. This may have contributed to the minor increase in groundwater levels. Figure 4 contains the hydrographs for the three wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for June 2002. Appendix B contains the contour map.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A and 4928C for the second quarter on June 5, 2002 and for the third quarter on November 27, 2002, except for well 4928C. Due to low regional groundwater levels during fourth quarter, well 4928C water level was too low to pump water to the surface for sampling. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix

C contains the groundwater sampling protocol. Appendix D contains analytical results from AETL of groundwater samples collected in 2002. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 2002, the groundwater met California Drinking Water Standards for most constituents. Total dissolved solids (TDS) levels exceeded the secondary drinking water standard of 500 mg/l at well 4928A and 4928C in June 5, 2002, and at well 4928A in March and November 2002. Table 3 shows selected 2002 results compared to California Drinking Water Standards. Appendix E contains water quality history graphs and statistical distribution graphs of selected groundwater constituents.

Organics

During 2002, levels of organic constituents were below California Drinking Water Standards, except for PCE in both wells during the second and fourth quarter except for well 4928C during the fourth quarter. Historically, the maximum concentration for PCE has been in the upgradient well. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels remained the same between the third quarter 2001 and first quarter 2002. Between the first and third quarters 2002, groundwater levels decreased approximately seven feet, present historic low water level, due to low precipitation received during the latter winter and spring months. Due to an overall decrease in regional groundwater levels over the past year, upgradient well 4928B was dry during the first and third quarter monitoring events. Other monitoring wells in the area used for groundwater level measurements are also dry. This is may be related to the past few dry summer seasons and minimal groundwater recharge efforts. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS). Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE. There does not appear to be a correlation between landfill operations and in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the

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potential for leachate from the landfill continues to be low. MACTEC will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Katherine Foley at (323) 889-5340.

Sincerely,

MACTEC Engineering and Consulting of Georgia, Inc.
F/k/a/ Law/Crandall, A Division of Law Engineering and Environmental Services, Inc.

by ____ with permission

Ernesto T. Aban, Jr.
Staff Engineer

Alex Lapostal, R.G. 6431
Principal Geologist

G:\PROJECTS\70111 ENVIRONMENTAL\92_PROJ\20346\DELIVERABLES\2002\0346AR01.DOC/EA:
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the _____ day of _____, 2003, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Quantities of Fill Deposited
Fourth Quarter 2002

Quarter	Month	Tons	Cubic Yards* (Approximate)
1	January	31,822	25,458
	February	29,267	23,414
	March	34,220	27,376
2	April	43,906	35,125
	May	38,897	31,118
	June	35,520	28,416
3	July	37,661	30,129
	August	46,180	36,944
	September	42,546	34,037
4	October	40,356	32,285
	November	23,165	18,532
	December	23,616	18,893
TOTALS		427,156	341,727

* 1.25 tons per cubic yard

Prepared by: ETA/1-27-03
Checked by: LB/1-27-03

Table 3: Site Water Quality vs. California Drinking Water Standards
2002 Cumulative Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
			4928A (downgradient)		4928C(upgradient)	
			June	November	June	November
Field Measurements						
pH (pH units)	pH units	6—9	7.65	7.13	7.30	—
Conductivity	µmhos/cm	900*	766	722	1699	—
Carbon Dioxide	ppm	—	26	32	115	—
Alkalinity	ppm	—	363	336	824	—
Inorganic						
Total Dissolved Solids (TDS)	ppm	500*	512	476	1010	—
Chloride (Cl)	ppm	250*	27	33	25	—
Sulfate (SO_4)	ppm	250*	73	75	39	—
Nitrate (NO_3)	ppm	45	29.2	53.1	19.5	—
Boron (B)	ppm	1**	0.3	0.4	0.9	—
Chemical Oxygen Demand (COD)	ppm	—	8[J]	5.4[J]	13	—
Bicarbonate (HCO3)	ppm	—	282	280	670	—
Carbonate (CO3)	ppm	—	<1	<1	<1	—
Nickel (Ni)	ppm	0.1	<0.05	<0.01	<0.05	—
Iron (Fe)	ppm	0.3	0.09	<0.03	<0.03	—
Cadmium (Cd)	ppb	5	<1	<1	<1	—
Chromium (Cr)	ppb	50	<10	<10	<10	—
Lead (Pb)	ppb	15**	<8	<8	<8	—
Organic						
Trichloroethylene (TCE)	ppb	5	0.8	0.6	0.4[J]	—
Tetrachloroethylene (PCE)	ppb	5	5.7	6.3	8.9	—
Benzene	ppb	1	<0.25	<0.25	<0.25	—
Vinyl Chloride (VC)	ppb	0.5	<0.25	<0.25	<0.25	—

Prepared/Date: ETA/1-27/03
Checked/Date: LB/1-27-03

1 – Source: CCR, Title 22, Division 4, Chapter 15

** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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FIGURES

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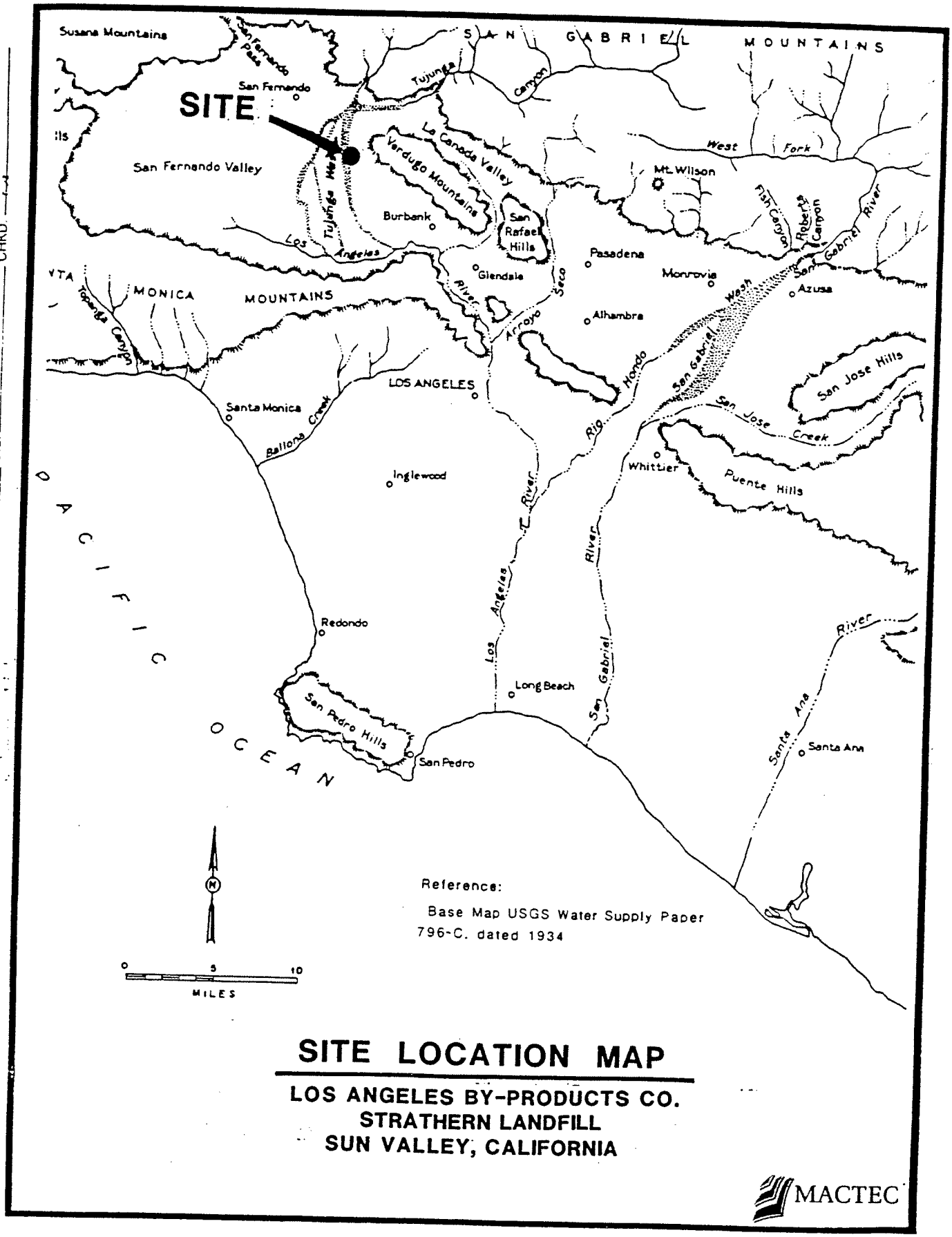

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

MACTEC

FIGURE 1

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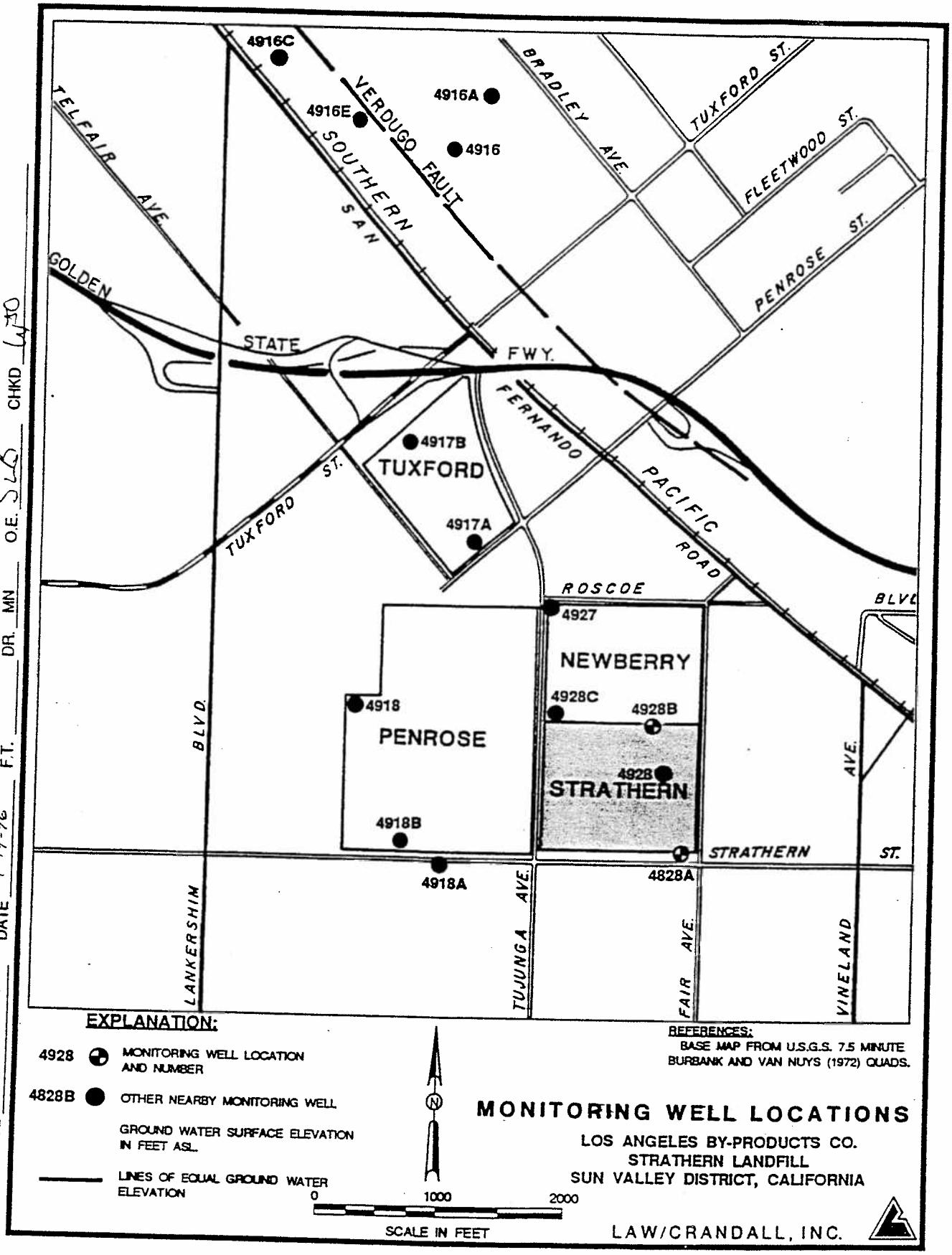


JOB 70111-2-0546 DATE 1-19-96 F.T. DR. MN O.E. SLS CHKD LJ30

FIGURE 2

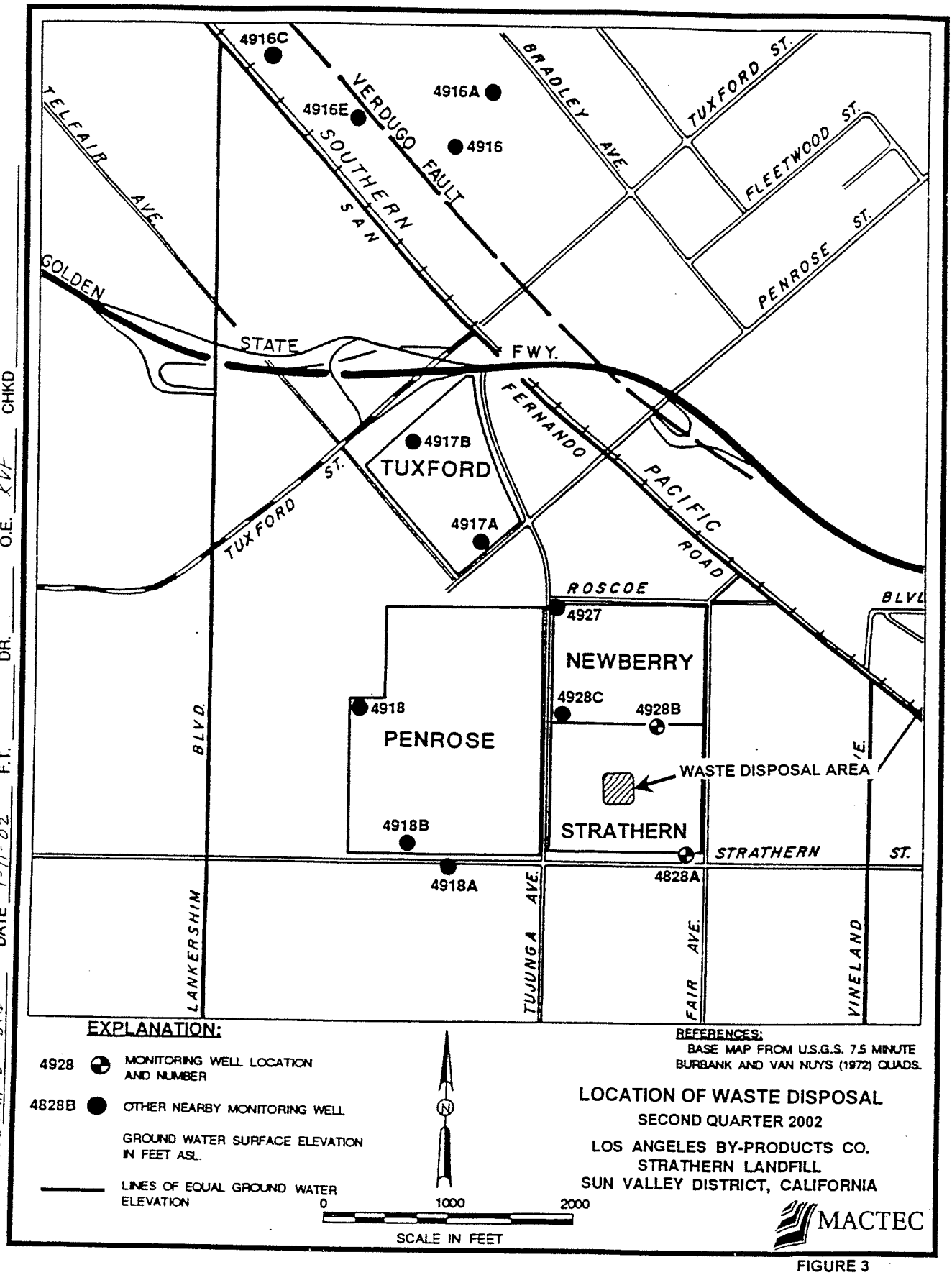
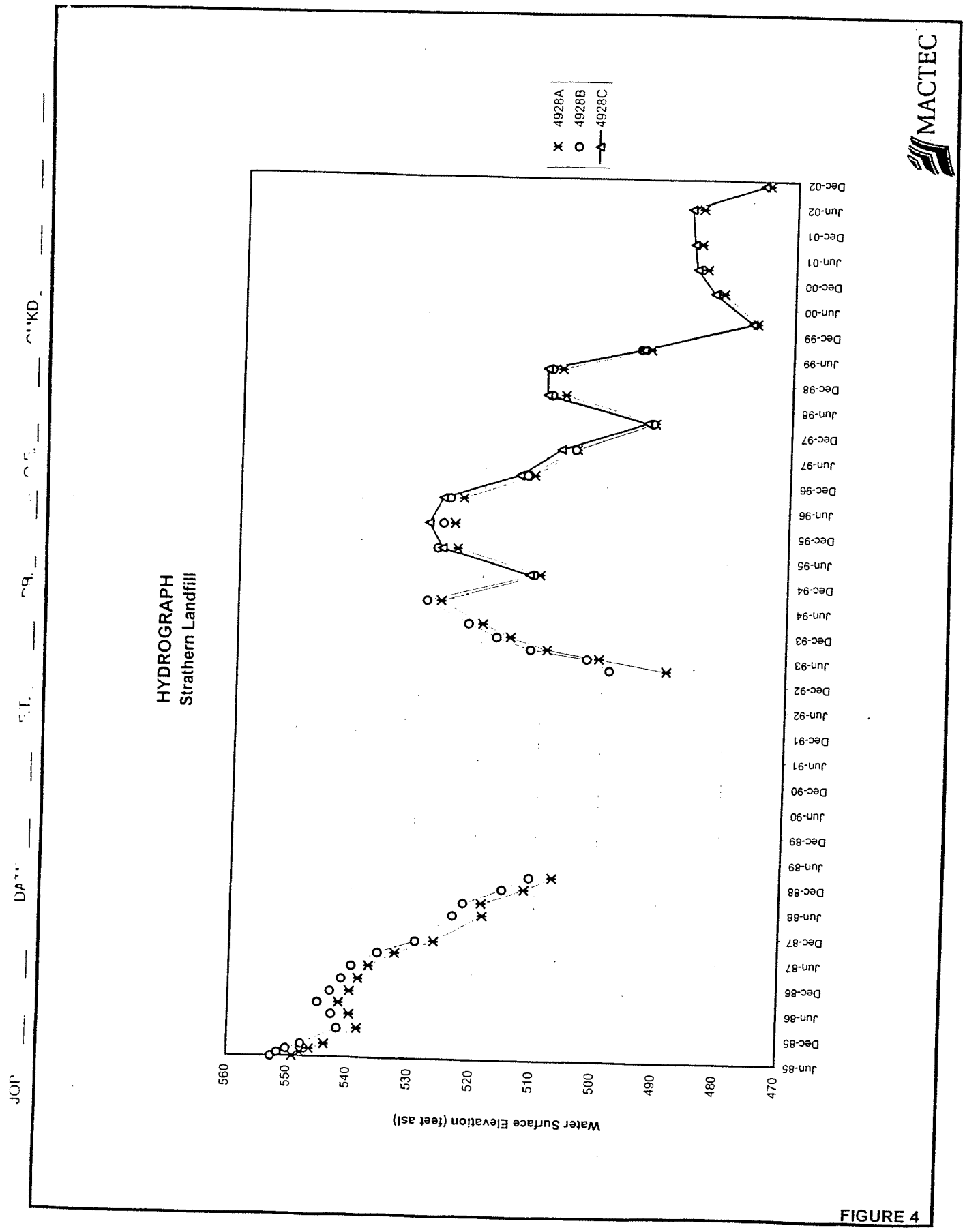

4916C
VERDUGO FAULT
SOUTHERN
SAN
4916E
4916A
4916
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
FERNANDO
4917B
TUXFORD
ST.
TUXFORD
4917A
PACIFIC
ROAD
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4918
PENROSE
WASTE DISPOSAL AREA
4918B
STRATHERN
STRATHERN
ST.
4828A
4918A
BLVD.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 7011-2-0346 DATE 7-11-02 F.T. DR. O.E. KVF CHKD
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL.
LINES OF EQUAL GROUND WATER ELEVATION
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
LOCATION OF WASTE DISPOSAL
SECOND QUARTER 2002
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
MACTEC

FIGURE 3


MACTEC
HYDROGRAPH
Strathern Landfill
4928A
4928B
4928C
Water Surface Elevation (feet asl)
560
550
540
530
520
510
500
490
480
470
Jun-85
Dec-85
Jun-86
Dec-86
Jun-87
Dec-87
Jun-88
Dec-88
Jun-89
Dec-89
Jun-90
Dec-90
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Dec-93
Jun-94
Dec-94
Jun-95
Dec-95
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Jun-97
Dec-97
Jun-98
Dec-98
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 70111-2-0346

POINT	DATE	WATER LEVEL REF PT.	WSE	FIELD MEASUREMENTS fpH	T(f)	fEC	CO2	Alk	GENERAL MINERALS EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84								560	7.70	73	16	26	4.2	0 0	280
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9 0	0 0	490
4928A	17-Jul-85		547.95	6.8	68	1180	102 0	480	1300	6.90	120	34	93	8.6	0 0	620
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0 0	610
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0 0	670
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.00	160	40	91	8 6	0 0	620
4928A	29-Apr-86		539.84	6.6	68	900	68 0	350	1100	7.80	170	27	63	7.6	0 0	488
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0 0	390
4928A	15-Oct-86		539.90	5.9	67	1200	26 0	470	1400	7 40	160	41	84	3 8	0 0	490
4928A	14-Jan-87		538.50	6.9	66	340	75 0	460	1400	7.00	160	38	82	7.6	0 0	590
4928A	15-Apr-87		536.86	5.8	69	1100	42 5	490	1500	6 80	170	44	85	6 6	<0.6	650
4928A	24-Jul-87	803.1	532 61	7.2	70	1200	35 0	515	1400	7.00	170	47	110	8 4	<0 6	630
4928A	21-Oct-87		526.40	6.9	66	760	34 5	436	1300	7.70	140	34	82	8.5	<0 6	590
4928A	29-Apr-88		518 58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6 4	<0 6	480
4928A	28-Jul-88		518 82	7.4	67	450	37.0	385	900	7.40	99	24	51	5 6	<0.6	442
4928A	08-Nov-88		511.81	7 2	65	700	32 0	350	760	7 20	91	26	49	5 6	<0.6	370
4928A	07-Feb-89	803.78	507 20	7 0	66	700	35 0	360	720	7.20	92	21	35	4 5	<0 6	350
4928A	02-Apr-93		489 42	7 9	67	350	37	264	590	7 60	72	17	29	4 6	<0 6	320
4928A	22-Jun-93		500 59	7.8	66	440	25	252	610	7 50	72	18	29	4 5	<0.6	290
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7 10	73	18	30	4.6	<0 6	290
4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7 40	69	17	29	4 5	<0 6	290
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0 6	430
4928A	05-Aug-94		526.64	7.00	66	700	55	356	820	7.00	91	23	39	5 4	<1	330
4928A	20-Feb-95		510.49						830	6 90	97	25	36	5 3	<0 6	390
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330
4928A	23-Feb-96		524 74	7.00	65	1015	75	400	1100	6 80	120	53	48	5 9	<10	380
4928A	23-Aug-96		523 41													
4928A	11-Sep-96		NM													
4928A	31-Oct-96		516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97		511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390
4928A	26-Aug-97		504.90	7.00	67	825	34	372	890	6 60	110	27	41	5.5	0	400
4928A	12-Mar-98		492.23	7.30	68	881	36	320	890	7.25	101	26 5	34 3	6 4	<2.0	320
4928A	21-Sep-98		507 01	7.17	66	785	25		816	7.04	96 6	24 6	31.2	5 0	<2	358
4928A	30-Mar-99		507 59	7.60	70	829		378	870	7 34	96 3	25 2	32 8	4.9	<2.0	324
4928A	25-Aug-99		493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4 5	<2.0	332
4928A	10-Mar-00		476.16	7.25	64	528	35	340	800	7 13	102	25 6	30 1	7 0	<1	296
4928A	09-Oct-00		481.63	6.76	67	800	30	372	790	6.81	93 9	24 2	32 6	5 5	<1	286
4928A	29-Mar-01		484.40	7.44	65	733	28	376	733	7.34	87 1	22 1	32.1	5 3	<1	290
4928A	25-Sep-01		485.40	8 10	68	511	32	156	817	7 31	89 6	23.2	31 2	5 3	<1	288
4928A	05-Jun-02		485.26	7.65	66	766	26	363	761	7.20	88 6	24.1	34 5	15.8	<1	282
4928A	27-Nov-02		474 58	6 90	65	722	32	336	824	7.13	99 4	26.1	35 3	5 5	<1	280

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JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	WATER LEVEL REF PT.	WSE	FIELD MEASUREMENTS lpH	T(f)	fEC	CO2	Alk	GENERAL MINERALS EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823 1							1000	7.10	110	20	100	5 4	0 0	470
4928B	19-Jun-85		552.73	8 4	70	900	66 0	392	870	7 10	82	24	92	6 3	0 0	450
4928B	17-Jul-85		551 71	6.8	74	800	60 0	310	900	6 90	82	24	84	6.2	0 0	450
4928B	14-Aug-85		550.29	7.2	72	850	13 0		860	7.80	120	20	65	7 2	0.0	390
4928B	19-Sep-85		547.87	6 5	70	740	30 5	350	820	6 90	130	23	49	3.3	0 0	380
4928B	16-Jan-86		541 82	7 2	68	750		321	750	7.20	107	22	36	4 4	0.0	340
4928B	29-Apr-86		542.86	6 7	71	520	18 0	255	600	8 00	120	17	30	5.2	0 0	341
4928B	22-Jul-86		545.14	7.3	70	620	30 0	270	700	7.40	110	20	37	4 4	0 0	290
4928B	15-Oct-86		543.10	6 0	68	690	33.5	255	680	7 60	87	10	29	4 2	0.0	280
4928B	14-Jen-87		541.32	6.7	66	500	16 5	240	700	7 30	88	21	35	4 2	0 0	340
4928B	15-Apr-87		539.63	6.2	65	450	25 0	250	680	7 00	80	22	33	4 0	<0.6	340
4928B	24-Jul-87		535.48	6.8	70	550	8 0	290	720	7.40	87	25	38	4 3	<0 6	350
4928B	21-Oct-87		529.40	6.9	66	465	65 0	291	740	7.90	90	22	35	5.0	<0.6	370
4928B	29-Apr-88		523 37	8 6	66	455	25.0	260	710	7 80	82	31	31	4.2	<0.6	356
4928B	28-Jul-88	823.17	521 77	7 4	68	335	25.0	336	680	7.50	85	20	30	3 9	<0 6	350
4928B	08-Nov-88		515.47	7 3	66	680	20.0	400	740	7.20	83	25	51	4 7	<0.6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0 6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5 0	<0 6	370
4928B	19-Nov-93		517.50	7 6	67.0	550	33	320	690	7.10	93	25	37	5 5	<0 8	370
4928B	21-Feb-94		522.09	7.3	69 0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	8.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0 6	550
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526 60	7 2	75.0	820	35	546	1400	6 80	190	54	52	6 5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7 0	71 0	1000		595	1100	6 90	160	43	46	6 1	<0 6	630
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7 00	110	31	36	5 6	0	500
4928B	26-Aug-97		505 13	7.1	71 5	1120	88	560	1000	6 60	150	41	45	6 4	0	600
4928B	12-Mar-98		492 50	7 0	73.6	1152		502	1110	7 00	97	35	81	9	<2 0	502
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7 09	72	22	101	7 2	<2 0	438
4928B	30-Mar-99		509.34	6 9	72 6	1381		532	1310	7.13	154	<0 05	43 8	6 2	<2 0	600
4928B	25-Aug-99		494.85	7.1	78 0	1240		628	1180	6 86	116	34	46	4 8	<2 0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													
4928B	25-Sep-01		DRY													
4928B	05-Jun-02		DRY													
4928B	27-Nov-02		DRY													

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JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.16													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		476.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670
4928C	27-Nov-02		475.52													

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JOB _____ DA.. _____ ..T. _____ BR. _____ ..KD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
	UNITS	SO4 mg/L	Cl mg/L	NO3 mg/L	B mg/L	HARD mg/L	TDS mg/L	COD mg/L	TCE µg/L	PCE µg/L	BENZENE µg/L	VC µg/L	Cd µg/L	Cr µg/L	Fe mg/L	Pb µg/L	Ni µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	15.0			650			1			1.0		0.70	10	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.048			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	18-Jan-86	28	150	5.4			860	<0.05	<1	1					<0.083			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.8			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.8		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	82	130	18.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.83		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	81	50	23.0	0.3		800	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	38	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	58	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<6	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	46	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	87	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	28-Aug-97	69	38	50	0.25		590	<8	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.8		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<8	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<8	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	8.9	<0.25	<0.25	<10	10[J]	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73	27	29.2	0.3	332	512	8[J]	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<50	AETL
4928A	27-Nov-02	75	33	53.1	0.4	348	476	5.4[J]	0.8	8.3	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL

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JOB _____ DATE _____ F.F. _____ DR. _____ C.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO 70111-2-0346

		GENERAL MINERALS (cont)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	60	40	19 0			620			4					<0 08			B&C
4928B	19-Jun-85	53	38	39 0			560	<0.05	<1	<1					<0 09			B&C
4928B	17-Jul-85	68	40	20 0			520	0.06	<1	<1					<0 06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	61	33	36 0			510	<0 05	<1	3					<0.042			B&C
4928B	16-Jan-86	28	25	26 0			460	<0 05	<1	<1					<0.063			B&C
4928B	29-Apr-86	30	20	7.0			320		<1	1					<0 2			B&C
4928B	22-Jul-86	29	22	6 9			420	0 12	<1	3					<0 2			B&C
4928B	15-Oct-86	60	35	15.0	0 3		440	<0.05	<1	<1			<10		0 29	<20		B&C
4928B	14-Jan-87	51	18	5 3	0.5		420	0 10	<1	2			<10		<0 03	<20	<0 06	B&C
4928B	15-Apr-87	54	18	6 6	0 4		410	0.08	<1	2			<10		0.88	<10	<0 04	B&C
4928B	24-Jul-87	50	24	6 8			430	<0 05	<1	4			<20		<0 02	<20	<0 04	B&C
4928B	21-Oct-87	50	21	6 4	0 25		430	<0.05	<1	<1			<20		0 20	<10	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7 0	<1	3			<20		5.70	13	<0 004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	6.0	<1	4			<1		<0 02	<2	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0 16		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89	56	17	3 9	<0.02		400	<5	1	5			<1		2.20	3	<0 04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0 5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1 7			1		14	24	<0.04	B&C
4928B	24-Aug-93	46	17	3 4			390	<6	<1	2 0			<1		17	18	<0 04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0 5	1 4			<1		82	3	<0 04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0 5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0 27		600		1.1	2 7			<3		7 9	17	<0 005	B&C
4928B	20-Feb-95	32	38	<0 1	<0.05		580	6.9	2 7	<0 5			<5	<10	2.4	16	<0 04	B&C
4928B	24-Aug-95	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0 04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2 6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0 31		760		1 4	5.6			<10	<10	<0.4	<50	<0 04	BCA
4928B	14-Feb-97	51	29	8.6	<0 2		560	15	1.1	4 2			<5	<10	0 063	<50	<0.04	VOC
4928B	26-Aug-97	48	38	6	0.21		660	34	0 78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		802	<10	0.5	1 9			<5	<10	51 5	140	<0 04	AETL
4928B	21-Sep-98	57	39	6.2	0 3		618	<6	<0.5	1 6			<5	<10	44.5	<50	<0 04	AETL
4928B	30-Mar-99	53	55	1 3	0 3		789	<6 0	0 6	1.8			<5	<10	34 4	<50	<0.04	AETL
4928B	25-Aug-99	67	40	6 6	0.3		754	<6.0	<0 5	1 9			<5	<10	0.33	<50	<0 04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	
4928B	25-Sep-01																	
4928B	05-Jun-02																	
4928B	27-Nov-02																	

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JO _____ DA _____ T. _____ R. _____ E. _____ KD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
	UNITS	SO4 mg/L	Cl mg/L	NO3 mg/L	B mg/L	HARD mg/L	TDS mg/L	COD mg/L	TCE µg/L	PCE µg/L	BENZENE µg/L	VC µg/L	Cd µg/L	Cr µg/L	Fe mg/L	Pb µg/L	Ni µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	.54	33	24	<0.1	418	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4[J]	5.4	<0.25	<0.25	<10	20[J]	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4[J]	8.9	<0.25	<0.25	<1	<10	<0.03	<8	<50	AETL
4928C	27-Nov-02																	

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER CONTOUR MAPS

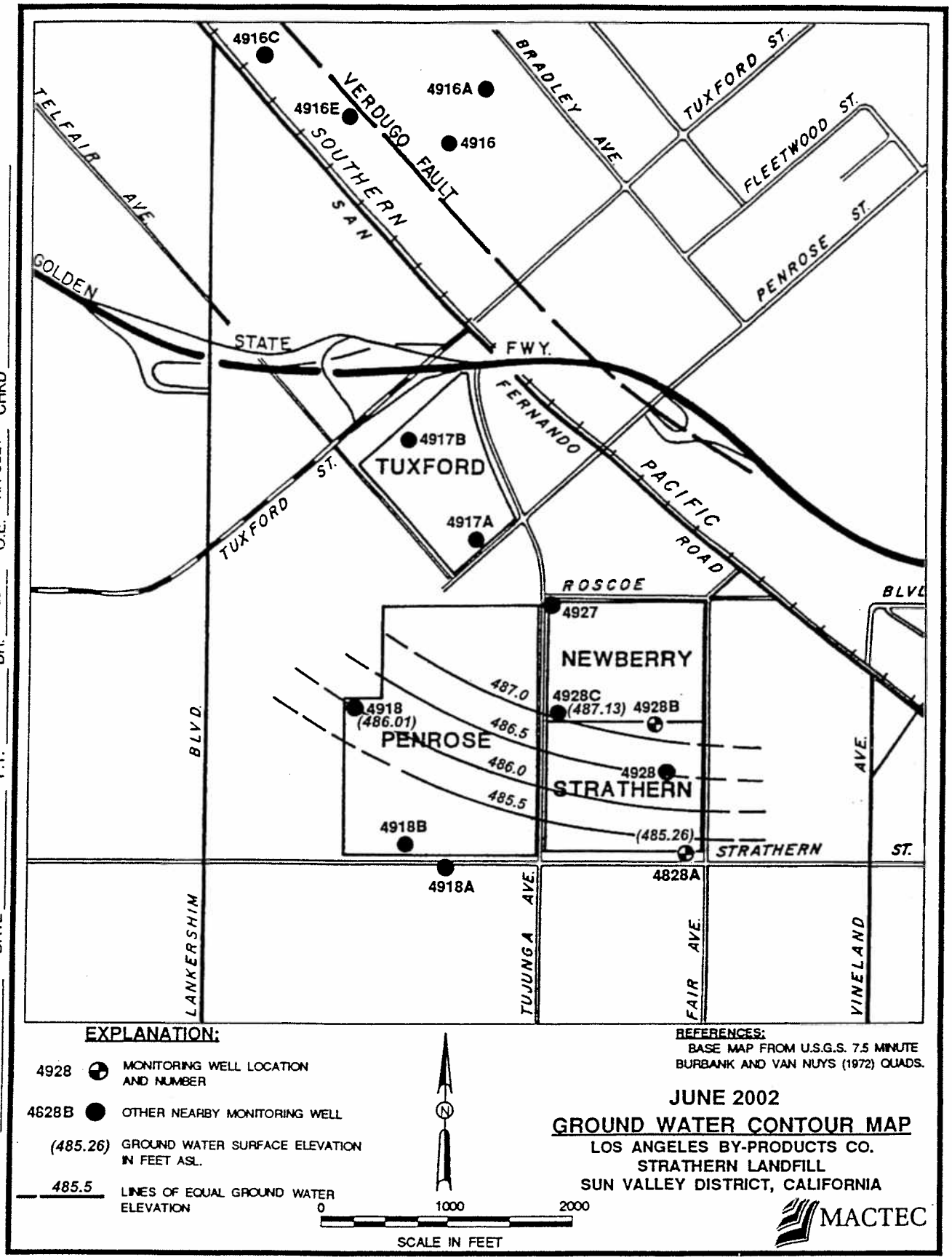

FIGURE 2

003162

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

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FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 06/05/2002
Date Reported 06/18/2002

Job Number	Order Date	Client
22135	06/05/2002	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern
Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: G. Mrelli Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Brajtz /Attn: Sto Aban
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-2-0346
SITE NAME AND ADDRESS: Strathern, Sun Valley, CA
AETL JOB No. 22135
Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	ANALYSIS REQUESTED: General Minerals	Boron, COD	Cd, Cr, Ni, Pb	524.2	TEST INSTRUCTIONS & COMMENTS
4928 A	AE116654	6-5-02	1120	Water	various	—	X	X	X	X	
4928C		6-5-02			various	—	X	X	X	X	
Trip Blank	AE116655	6-5-02			Voa	—				X	

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	6	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / (N) / NA		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Aban	Signature:	Signature:
Printed Name: Sto Aban	Printed Name:	Printed Name:
Date: 6-5-02 Time: 1325	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: G. Morelli
Printed Name:	Printed Name:	Printed Name: G. Morelli
Date: Time:	Date: Time:	Date: 6-5-02 Time: 15:25

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

0031S7

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ANALYTICAL RESULTS

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Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Our Lab I.D.				AE116654	AE116655		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			06/05/2002	06/05/2002	06/05/2002		
Date Prepared			06/05/2002	06/05/2002	06/05/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			06/07/2002	06/07/2002	06/07/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	1.6	ND		
1,1-Dichloroethane	0.25	0.50	ND	3.3	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Our Lab I.D.				AE116654	AE116655		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			06/05/2002	06/05/2002	06/05/2002		
Date Prepared			06/05/2002	06/05/2002	06/05/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			06/07/2002	06/07/2002	06/07/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.6	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	5.7	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.8	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE116654	AE116655		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		110	82	80		
1,2-Dichlorobenzene	75-125		101	90	97		

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Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: VARIOUS QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Our Lab I.D.				AE116654			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			06/05/2002	06/05/2002			
Date Prepared			06/05/2002	06/05/2002			
Preparation Method			Various	Various			
Date Analyzed			06/16/2002	06/16/2002			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	282			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	282			
Anions Total (meq/L)	0.01	0.01	NA	8.42			
Cations Total (meq/L)	0.01	0.01	NA	8.35			
Ion Balance (percent difference)	0.01	0.01	NA	0.42			
Nitrate	0.05	0.10	ND	29.2			
Nitrite	0.01	0.02	ND	ND			
Total Dissolved Solids	5	10	ND	512			
Chloride (Cl), Total	0.5	1.0	ND	27			
Conductivity (umhos/cm @77F)	5	10	ND	761			
Fluoride, Total	0.1	0.2	ND	0.5			
Hardness (Ca,Mg) as CaCO3	1	2	ND	332			
pH (pH units)	0.01	0.01	NA	7.20			
Sulfate	5	10	ND	73			
Surfactants (MBAS)	0.03	0.05	ND	0.09			
Aluminum	0.05	0.10	ND	1.79			
Calcium	0.25	0.50	ND	88.6			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	0.09			
Magnesium	0.25	0.50	ND	24.1			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	15.8			
Sodium	0.25	0.50	ND	34.5			
Zinc	0.01	0.03	ND	0.20			

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Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Our Lab I.D.							N/A	AE116654	
Client Sample I.D.							Method Blank	4928A	
Date Sampled							06/05/2002	06/05/2002	
Matrix							Aqueous	Aqueous	
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Cadmium	1	200.7	mg/L	0.001	0.005	06/16/2002	ND	ND	
Chromium	1	200.7	mg/L	0.010	0.050	06/16/2002	ND	ND	
Lead	1	200.7	mg/L	0.008	0.015	06/16/2002	ND	ND	
Nickel	1	200.7	mg/L	0.05	0.10	06/16/2002	ND	ND	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/10/2002	ND	8J	
Boron	1	SM-4500B	mg/L	0.1	0.2	06/05/2002	ND	0.3	

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 200.7, Metals (Cd,Cr,Pb,Ni)

QUALITY CONTROL REPORT

QC Batch No: 06142002 QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15
Chromium	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15
Lead	1.00	0.98	98	1.00	0.95	95	3.1	80-120	<15
Nickel	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15

QC Batch No: 06142002 QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	0.98	98	80-120
Chromium	1.00	0.97	97	80-120
Lead	1.00	0.95	95	80-120
Nickel	1.00	0.99	99	80-120

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Telephone: (323)889-5300
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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 06102002 QC Prepared: 06/10/2002 QC Analyzed: 06/10/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.00	98	50.00	48.50	97	1.0	80-120	<15	

QC Batch No: 06102002 QC Prepared: 06/10/2002 QC Analyzed: 06/10/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	5J	5J	<1	<15	50.00	50.50	101	80-120		

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	50.00	53.00	106	50.00	52.00	104	1.9	75-125	<20
Chlorobenzene	50.00	44.50	89	50.00	49.00	98	9.6	75-125	<20
1,1-Dichloroethene	50.00	45.50	91	50.00	44.00	88	3.4	75-125	<20
Toluene (Methyl benzene)	50.00	47.50	95	50.00	49.00	98	3.1	75-125	<20
LCS									
Chloroform (Trichloromethane)	50.00	50.50	101	50.00	48.00	96	5.1	75-125	<20
Ethylbenzene	50.00	45.50	91	50.00	50.50	101	10.4	75-125	<20
1,1,1-Trichloroethane	50.00	45.00	90	50.00	45.50	91	1.1	75-125	<20
Trichloroethene	50.00	49.50	99	50.00	47.50	95	4.1	75-125	<20
o-Xylene	50.00	50.50	101	50.00	50.00	100	<1	75-125	<20
m,p-Xylenes	100.00	91.00	91	100.00	99.00	99	8.4	75-125	<20

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
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Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	22.00	110	9.5	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	22.00	110	9.5	80-120	<15	
Nitrate	0.50	0.47	94	0.50	0.46	91	3.2	80-120	<15	
Nitrite	0.20	0.19	97	0.20	0.19	97	<1	80-120	<15	
Chloride (Cl), Total	20.00	20.60	103	20.00	19.60	98	5.0	80-120	<15	
Fluoride, Total	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Sulfate	20.00	18.80	94	20.00	19.00	95	1.1	80-120	<15	
Surfactants (MBAS)	0.20	0.19	95	0.20	0.20	100	5.1	80-120	<15	
Aluminum	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15	
Calcium	1.00	1.01	101	1.00	1.02	102	<1	80-120	<15	
Copper	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	
Iron	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Magnesium	1.00	1.02	102	1.00	1.04	104	1.9	80-120	<15	
Manganese	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15	
Potassium	1.00	0.96	96	1.00	0.98	98	2.1	80-120	<15	
Sodium	1.00	0.99	99	1.00	1.01	101	2.0	80-120	<15	
Zinc	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Nitrate	0.50	0.49	98	80-120						
Nitrite	0.20	0.19	96	80-120						
Total Dissolved Solids	100.00	94.00	94	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120						
Fluoride, Total	1.00	0.99	99	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
pH (pH units)	7.00	7.00	100	80-120
Sulfate	20.00	18.60	93	80-120
Surfactants (MBAS)	0.20	0.19	97	80-120
Aluminum	1.00	1.01	101	80-120
Calcium	1.00	1.02	102	80-120
Copper	1.00	0.98	98	80-120
Iron	1.00	1.03	103	80-120
Magnesium	1.00	1.01	101	80-120
Manganese	1.00	0.97	97	80-120
Potassium	1.00	0.96	96	80-120
Sodium	1.00	0.94	94	80-120
Zinc	1.00	0.98	98	80-120

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Site

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Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 06052002 QC Prepared: 06/05/2002 QC Analyzed: 06/05/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.50	0.50	100	0.50	0.49	98	2.0	80-120	<15

QC Batch No: 06052002 QC Prepared: 06/05/2002 QC Analyzed: 06/05/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Boron	0.3	0.3	<1	<15	0.50	0.50	99	80-120

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Number of Pages 12
Date Received 06/19/2002
Date Reported 07/02/2002

Job Number	Order Date	Client
22286	06/19/2002	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

COMPANY: Law
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Brait TS
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-20346
SITE NAME AND ADDRESS: Strathern Landfill, Sun Valley, CA

AETL JOB No. 22286

Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
4928C	AE118091	6-19-02	1050	water	Various 6	—
Trip Blank	AE118092	6-19-02		water	Various 2	—

ANALYSIS REQUESTED

pH, EC	General minerals	HCO_3, CO_3, TDS	Cl, Fe, NO_3, SO_4	Boron	COD	524.2	Cd, Cr, Ni, Pb
X	X	X	X	X	X	X	X

TEST INSTRUCTIONS & COMMENTS: Analysis for dissolved metals

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	8	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☑ NORMAL ☐ RUSH ☐ SAME DAY 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:	Signature:	Signature:
Printed Name: STD Abas	Printed Name:	Printed Name:
Date: 6-19-02 Time: 1155	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name: BLALAZAR
Date: Time:	Date: Time:	Date: 6/19/02 Time: 1200

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

0031882

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ANALYTICAL RESULTS

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Los Angeles, CA 90040-1554

Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Our Lab I.D.				AE118091	AE118092		
Client Sample I.D.			Method Blank	4928C	Trip Blank		
Date Sampled			06/19/2002	06/19/2002	06/19/2002		
Date Prepared			06/19/2002	06/19/2002	06/19/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			07/01/2002	07/01/2002	07/01/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	1.3	ND		
1,1-Dichloroethane	0.25	0.50	ND	ND	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Our Lab I.D.				AE118091	AE118092		
Client Sample I.D.			Method Blank	4928C	Trip Blank		
Date Sampled			06/19/2002	06/19/2002	06/19/2002		
Date Prepared			06/19/2002	06/19/2002	06/19/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			07/01/2002	07/01/2002	07/01/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
trans-1.2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	8.9	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.4J	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE118091	AE118092		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		109	100	116		
1,2-Dichlorobenzene	75-125		117	118	111		

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Sun Valley, CA

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Page 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Our Lab I.D.							N/A	AE118091	
Client Sample I.D.							Method Blank	4928C	
Date Sampled							06/19/2002	06/19/2002	
Matrix							Aqueous	Aqueous	
Analytes	D.F.	Method	Units	MDL	PQL	Analyzed	Results	Results	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/19/2002	ND	13	
Cadmium	1	6010BSCAN	mg/L	0.001	0.005	06/27/2002	ND	ND	
Chromium	1	6010BSCAN	mg/L	0.010	0.050	06/27/2002	ND	ND	
Lead	1	6010BSCAN	mg/L	0.008	0.015	06/27/2002	ND	ND	
Nickel	1	6010BSCAN	mg/L	0.05	0.10	06/27/2002	ND	ND	
Boron	1	SM-4500B	mg/L	0.1	0.2	06/26/2002	ND	0.9	

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Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Our Lab I.D.				AE118091			
Client Sample I.D.			Method Blank	4928C			
Date Sampled			06/19/2002	06/19/2002			
Date Prepared			06/27/2002	06/27/2002			
Preparation Method			Various	Various			
Date Analyzed			06/27/2002	06/27/2002			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	670			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	670			
Anions Total (meq/L)	0.01	0.01	ND	15.22			
Cations Total (meq/L)	0.01	0.01	ND	15.35			
Ion Balance (percent difference)	0.01	0.01	ND	0.42			
Nitrate	0.05	0.10	ND	19.5			
Nitrite	0.01	0.02	ND	ND			
Chloride (Cl), Total	0.5	1.0	ND	25			
Conductivity (umhos/cm @77F)	5	10	ND	1,580			
Fluoride, Total	0.1	0.2	ND	0.3			
Hardness (Ca,Mg) as CaCO3	1	2	ND	800			
pH (pH units)	0.01	0.01	ND	7.00			
Sulfate	5	10	ND	39			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	1,010			
Aluminum	0.05	0.10	ND	ND			
Calcium	0.25	0.50	ND	151			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	ND			
Magnesium	0.25	0.50	ND	39.8			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	8.41			
Sodium	0.25	0.50	ND	98.3			
Zinc	0.01	0.03	ND	0.22			

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 06192002 QC Prepared: 06/19/2002 QC Analyzed: 06/19/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.00	98	50.00	50.00	100	2.0	80-120	<15	

QC Batch No: 06192002 QC Prepared: 06/19/2002 QC Analyzed: 06/19/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	93	93	<1	<15	50.00	51.00	102	80-120		

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ANALYTICAL RESULTS

Ordered By

Law, Inc.
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Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	25.00	25.25	101	25.00	24.50	98	3.0	75-125	<20
Chlorobenzene	25.00	25.25	101	25.00	23.50	94	7.2	75-125	<20
1,1-Dichloroethene	25.00	26.00	104	25.00	24.50	98	5.9	75-125	<20
Toluene (Methyl benzene)	25.00	24.00	96	25.00	22.50	90	6.5	75-125	<20
LCS									
Chloroform (Trichloromethane)	25.00	25.00	100	25.00	27.75	111	10.4	75-125	<20
Ethylbenzene	25.00	24.75	99	25.00	23.50	94	5.2	75-125	<20
1,1,1-Trichloroethane	25.00	25.75	103	25.00	28.50	114	10.1	75-125	<20
Trichloroethene	25.00	23.75	95	25.00	23.50	94	1.1	75-125	<20
o-Xylene	25.00	24.25	97	25.00	23.00	92	5.3	75-125	<20
m,p-Xylenes	50.00	51.00	102	50.00	46.50	93	9.2	75-125	<20

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	1.00	1.05	105	1.00	1.00	100	4.9	80-120	<15
Chromium	1.00	1.02	102	1.00	0.98	98	4.0	80-120	<15
Lead	1.00	1.02	102	1.00	1.01	101	<1	80-120	<15
Nickel	1.00	1.04	104	1.00	1.00	100	3.9	80-120	<15

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Cadmium	1.00	0.96	96	80-120
Chromium	1.00	0.95	95	80-120
Lead	1.00	0.95	95	80-120
Nickel	1.00	0.95	95	80-120

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Nitrate	0.50	0.49	98	0.50	0.48	96	2.1	80-120	<15
Nitrite	0.20	0.19	96	0.20	0.19	96	<1	80-120	<15
Chloride (Cl), Total	20.00	20.00	100	20.00	21.00	105	4.9	80-120	<15
Fluoride, Total	1.00	0.97	97	1.00	0.98	98	1.0	80-120	<15
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Sulfate	20.00	18.20	91	20.00	19.60	98	7.4	80-120	<15
Surfactants (MBAS)	0.20	0.20	99	0.20	0.19	97	2.0	80-120	<15
Aluminum	1.00	1.06	106	1.00	1.05	105	<1	80-120	<15
Calcium	1.00	1.02	102	1.00	1.04	104	1.9	80-120	<15
Copper	1.00	1.03	103	1.00	0.99	99	4.0	80-120	<15
Iron	1.00	1.09	109	1.00	1.08	108	<1	80-120	<15
Magnesium	1.00	1.01	101	1.00	1.02	102	<1	80-120	<15
Manganese	1.00	1.04	104	1.00	0.95	95	9.0	80-120	<15
Potassium	0.01	0.01	103	0.01	0.01	101	2.0	80-120	<15
Sodium	1.00	1.10	110	1.00	1.02	102	7.5	80-120	<15
Zinc	1.00	1.04	104	1.00	0.98	98	5.9	80-120	<15

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Nitrate	0.50	0.48	96	80-120
Nitrite	0.20	0.19	94	80-120
Chloride (Cl), Total	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120
Fluoride, Total	1.00	0.99	99	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
pH (pH units)	7.00	7.00	100	80-120
Sulfate	20.00	19.20	96	80-120
Surfactants (MBAS)	0.20	0.19	97	80-120
Total Dissolved Solids	100.00	95.00	95	80-120
Aluminum	1.00	1.04	104	80-120
Calcium	1.00	1.01	101	80-120
Copper	1.00	0.95	95	80-120
Iron	1.00	1.12	112	80-120
Magnesium	1.00	1.02	102	80-120
Manganese	1.00	1.00	100	80-120
Potassium	0.01	0.01	101	80-120
Sodium	1.00	1.09	109	80-120
Zinc	1.00	0.96	96	80-120

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ANALYTICAL RESULTS

Ordered By

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Site

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Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 06262002 QC Prepared: 06/26/2002 QC Analyzed: 06/26/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.46	91	0.50	0.47	94	3.2	80-120	<15	

QC Batch No: 06262002 QC Prepared: 06/26/2002 QC Analyzed: 06/26/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.9	0.8	11.8	<15	0.50	0.53	106	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Attention: Bill O'Braitis

Number of Pages 12
Date Received 11/27/2002
Date Reported 12/18/2002

Job Number	Order Date	Client
23748	11/27/2002	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: G. Mrli

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

COMPANY: MacTec
PHONE: 313-889-5300
PROJECT MANAGER: Bill O'Braitis / Attn: Sto Abar
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-2-0346
SITE NAME AND ADDRESS: Strathern Landfill, Sun Valley, CA

AETL JOB No. 23748

Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	General Minerals	Total Hardness	Boron, COD	524.2	Cl, Cr, N, P, Br						TEST INSTRUCTIONS & COMMENTS
4928 A	23748-01	11/27/02	1155	water	Various	HCl (524.2)	X	X	X	X	X						dissolved metal + liter sample

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	5	PROPERLY COOLED	Y / N / NA
CUSTODY SEALS Y / N / NA		SAMPLES INTACT	Y / N / NA
RECEIVED IN GOOD COND.	Y / N	SAMPLES ACCEPTED	Y / N

TURN AROUND TIME

☑ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Abar	Signature:	Signature:
Printed Name: Sto Abar	Printed Name:	Printed Name:
Date: 11/27/02 Time: 1345	Date: Time:	Date: Time:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: 3.
Signature:	Signature:	Signature: J. Hunt
Printed Name:	Printed Name:	Printed Name: J. Hunt
Date: Time:	Date: Time:	Date: 11/27/02 Time: 13:45

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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003106

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ANALYTICAL RESULTS

Ordered By
MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 12032002 QC Prepared: 12/03/2002 QC Analyzed: 12/03/2002

Our Lab I.D.				23748.01
Client Sample I.D.			Method Blank	4928A
Date Sampled			11/27/2002	11/27/2002
Date Prepared			11/27/2002	11/27/2002
Preparation Method			5035	5035
Date Analyzed			12/03/2002	12/03/2002
Matrix			Aqueous	Aqueous
Units			ug/L	ug/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
Benzene	0.25	0.50	ND	ND
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND
Bromochloromethane	0.25	0.50	ND	ND
Bromodichloromethane	0.25	0.50	ND	ND
Bromoform (Tribromomethane)	0.25	0.50	ND	ND
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND
n-Butylbenzene	0.25	0.50	ND	ND
sec-Butylbenzene	0.25	0.50	ND	ND
tert-Butylbenzene	0.25	0.50	ND	ND
Carbon tetrachloride	0.25	0.50	ND	ND
Chlorobenzene	0.25	0.50	ND	ND
Chloroethane	0.25	0.50	ND	ND
Chloroform (Trichloromethane)	0.25	0.50	ND	ND
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND
2-Chlorotoluene	0.25	0.50	ND	ND
4-Chlorotoluene	0.25	0.50	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND
Dibromochloromethane	0.25	0.50	ND	ND
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND
Dibromomethane	0.5	1.0	ND	ND
1,2-Dichlorobenzene	0.25	0.50	ND	ND
1,3-Dichlorobenzene	0.25	0.50	ND	ND
1,4-Dichlorobenzene	0.25	0.50	ND	ND
Dichlorodifluoromethane	0.25	0.50	ND	1.1
1,1-Dichloroethane	0.25	0.50	ND	2.2
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND

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ANALYTICAL RESULTS

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
23748	11/27/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 12032002 QC Prepared: 12/03/2002 QC Analyzed: 12/03/2002

Our Lab I.D.				**23748.01**
Client Sample I.D.			Method Blank	4928A
Date Sampled			11/27/2002	11/27/2002
Date Prepared			11/27/2002	11/27/2002
Preparation Method			5035	5035
Date Analyzed			12/03/2002	12/03/2002
Matrix			Aqueous	Aqueous
Units			ug/L	ug/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
1,1-Dichloroethene	0.25	0.50	ND	ND
cis-1,2-Dichloroethene	0.25	0.50	ND	0.3J
trans-1,2-Dichloroethene	0.25	0.50	ND	ND
1,2-Dichloropropane	0.25	0.50	ND	ND
1,3-Dichloropropane	0.25	0.50	ND	ND
2,2-Dichloropropane	0.25	0.50	ND	ND
1,1-Dichloropropene	0.25	0.50	ND	ND
cis-1,3-Dichloropropene	0.25	0.50	ND	ND
trans-1,3-Dichloropropene	0.25	0.50	ND	ND
Ethylbenzene	0.25	0.50	ND	ND
Hexachlorobutadiene	0.25	0.50	ND	ND
Isopropylbenzene	0.25	0.50	ND	ND
p-Isopropyltoluene	0.25	0.50	ND	ND
Methylene chloride (DCM)	0.5	1.0	ND	ND
Naphthalene	0.5	1.0	ND	ND
n-Propylbenzene	0.25	0.50	ND	ND
Styrene	0.25	0.50	ND	ND
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND
Tetrachloroethene	0.25	0.50	ND	6.3
Toluene (Methyl benzene)	0.25	0.50	ND	ND
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND
1,1,1-Trichloroethane	0.25	0.50	ND	ND
1,1,2-Trichloroethane	0.25	0.50	ND	ND
Trichloroethene	0.25	0.50	ND	0.6
Trichlorofluoromethane	0.5	1.0	ND	ND
1,2,3-Trichloropropane	0.5	1.0	ND	ND
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND
o-xylene	0.25	0.50	ND	ND
m,p-Xylenes	0.5	1.0	ND	ND

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
23748	11/27/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				23748.01			
Surrogates	Con.Limit		% Rec.	% Rec.			
Bromofluorobenzene	75-125		84	97			
1,2-Dichlorobenzene	75-125		88	99			

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ANALYTICAL RESULTS

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Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 11272002 QC Prepared: 11/27/2002 QC Analyzed: 12/06/2002

Our Lab I.D.				23748.01
Client Sample I.D.			Method Blank	4928A
Date Sampled			11/27/2002	11/27/2002
Date Prepared			11/27/2002	11/27/2002
Preparation Method			Various	Various
Date Analyzed			12/06/2002	12/06/2002
Matrix			Aqueous	Aqueous
Units			mg/L	mg/L
Dilution Factor			1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**
Bicarbonate (as CaCO3)	1	2	ND	280
Carbonate (as CaCO3)	1	2	ND	ND
Hydroxide (as CaCO3)	1	2	ND	ND
Total Alkalinity	1	2	ND	280
Anions Total (meq/L)	0.01	0.01	NA	8.97
Cations Total (meq/L)	0.01	0.01	NA	8.82
Ion Balance (percent difference)	0.01	0.01	NA	0.84
Chloride (Cl), Total	0.5	1.0	ND	33
Conductivity (umhos/cm @77F)	5	10	ND	824
Fluoride, Total	0.1	0.2	ND	0.4
Hardness (Ca,Mg) as CaCO3	1	2	ND	348
Nitrate as Nitrogen	0.05	0.10	ND	12.0
Nitrite as Nitrogen	0.01	0.02	ND	ND
pH (pH units)	0.01	0.01	NA	7.13
Sulfate	5	10	ND	75
Surfactants (MBAS)	0.03	0.05	ND	ND
Total Dissolved Solids	5	10	ND	476
Calcium	0.25	0.50	ND	99.4
Copper	0.01	0.02	ND	ND
Iron	0.03	0.05	ND	ND
Magnesium	0.25	0.50	ND	26.1
Manganese	0.005	0.010	ND	ND
Potassium	0.5	1.0	ND	5.5
Sodium	0.25	0.50	ND	35.3
Zinc	0.01	0.03	ND	0.14

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ANALYTICAL RESULTS

Ordered By

MACTEC
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Our Lab I.D.							N/A	23748.01	
Client Sample I.D.							Method Blank	4928A	
Date Sampled							11/27/2002	11/27/2002	
Matrix							Aqueous	Aqueous	
Analytes	D.F.	Method	Units	MDL	PQL	Analyzed	Results	Results	
Cadmium	1	200.7	mg/L	0.001	0.005	12/05/2002	ND	ND	
Chromium	1	200.7	mg/L	0.010	0.050	12/05/2002	ND	ND	
Iron	1	200.7	mg/L	0.03	0.05	12/05/2002	ND	ND	
Lead	1	200.7	mg/L	0.008	0.015	12/05/2002	ND	ND	
Nickel	1	200.7	mg/L	0.05	0.10	12/05/2002	ND	ND	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	12/04/2002	ND	5.4J	
Boron	1	SM-4500B	mg/L	0.1	0.2	12/06/2002	ND	0.4	

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: 200.7, 5 Metals (Cd, Cr, Fe, Pb, Ni)
QUALITY CONTROL REPORT

QC Batch No: 12022002 QC Prepared: 12/02/2002 QC Analyzed: 12/05/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chromium	1.00	1.01	101	1.00	1.00	100	<1	80-120	<15
Iron	1.00	0.93	93	1.00	0.93	93	<1	80-120	<15
Cadmium	1.00	1.01	101	1.00	1.00	100	<1	80-120	<15
Lead	1.00	1.03	103	1.00	1.01	101	2.0	80-120	<15
Nickel	1.00	1.00	100	1.00	0.99	99	1.0	80-120	<15

QC Batch No: 12022002 QC Prepared: 12/02/2002 QC Analyzed: 12/05/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Chromium	1.00	0.98	98	80-120
Iron	1.00	0.93	93	80-120
Cadmium	1.00	1.00	100	80-120
Lead	1.00	0.97	97	80-120
Nickel	1.00	1.00	100	80-120

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 12042002 QC Prepared: 12/04/2002 QC Analyzed: 12/04/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chemical Oxygen Demand	50.00	50.50	101	50.00	48.00	96	5.1	80-120	<15

QC Batch No: 12042002 QC Prepared: 12/04/2002 QC Analyzed: 12/04/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Chemical Oxygen Demand	96.7	97.4	<1	<15	50.00	52.00	104	80-120

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS
QUALITY CONTROL REPORT

QC Batch No: 12032002 QC Prepared: 11/27/2002 QC Analyzed: 12/03/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Benzene	25.00	24.50	98	25.00	24.25	97	1.0	75-125	<20
Chlorobenzene	25.00	26.25	105	25.00	23.25	93	12.1	75-125	<20
1,1-Dichloroethene	25.00	25.25	101	25.00	23.25	93	8.2	75-125	<20
Toluene (Methyl benzene)	25.00	24.75	99	25.00	23.50	94	5.2	75-125	<20
LCS									
Chloroform (Trichloromethane)	25.00	26.25	105	25.00	24.75	99	5.9	75-125	<20
Ethylbenzene	25.00	26.00	104	25.00	23.00	92	12.2	75-125	<20
1,1,1-Trichloroethane	25.00	24.00	96	25.00	23.50	94	2.1	75-125	<20
Trichloroethene	25.00	24.25	97	25.00	24.50	98	1.0	75-125	<20
o-Xylene	25.00	26.75	107	25.00	24.00	96	10.8	75-125	<20
m,p-Xylenes	25.00	26.25	105	25.00	23.00	92	13.2	75-125	<20

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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)
QUALITY CONTROL REPORT

QC Batch No: 11272002 QC Prepared: 11/27/2002 QC Analyzed: 12/06/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15
Chloride (Cl), Total	20.00	19.60	98	20.00	19.60	98	<1	80-120	<15
Fluoride, Total	1.00	0.92	92	1.00	0.97	97	5.3	80-120	<15
Hardness (Ca,Mg) as CaCO3	20.00	18.00	90	20.00	20.00	100	10.5	80-120	<15
Nitrate as Nitrogen	0.50	0.46	92	0.50	0.45	90	2.2	80-120	<15
Nitrite as Nitrogen	0.20	0.19	97	0.20	0.19	95	2.1	80-120	<15
Sulfate	20.00	18.40	92	20.00	19.20	96	4.3	80-120	<15
Surfactants (MBAS)	0.20	0.20	101	0.20	0.20	98	3.0	80-120	<15
Calcium	1.00	0.90	90	1.00	0.90	90	<1	80-120	<15
Copper	1.00	1.04	104	1.00	1.03	103	<1	80-120	<15
Iron	1.00	0.93	93	1.00	0.93	93	<1	80-120	<15
Magnesium	1.00	0.88	88	1.00	0.90	90	2.2	80-120	<15
Manganese	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15
Potassium	1.00	0.90	90	1.00	0.90	90	<1	80-120	<15
Sodium	1.00	0.90	90	1.00	0.91	91	1.1	80-120	<15
Zinc	1.00	1.04	104	1.00	1.03	103	<1	80-120	<15

QC Batch No: 11272002 QC Prepared: 11/27/2002 QC Analyzed: 12/06/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120
Total Alkalinity	20.00	20.00	100	80-120
Chloride (Cl), Total	20.00	20.00	100	80-120
Conductivity (umhos/cm @77F)	141.30	139.89	99	80-120
Fluoride, Total	1.00	0.92	92	80-120
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120
Nitrate as Nitrogen	0.50	0.48	95	80-120
Nitrite as Nitrogen	0.20	0.20	100	80-120
pH (pH units)	7.00	7.00	100	80-120

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
23748	11/27/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 11272002 QC Prepared: 11/27/2002 QC Analyzed: 12/06/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Sulfate	20.00	19.00	95	80-120
Surfactants (MBAS)	0.20	0.20	98	80-120
Total Dissolved Solids	100.00	93.00	93	80-120
Calcium	1.00	0.90	90	80-120
Copper	1.00	0.99	99	80-120
Iron	1.00	0.93	93	80-120
Magnesium	1.00	0.88	88	80-120
Manganese	1.00	0.97	97	80-120
Potassium	1.00	0.90	90	80-120
Sodium	1.00	0.90	90	80-120
Zinc	1.00	0.99	99	80-120

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ANALYTICAL RESULTS

Ordered By
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Site
Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
23748	11/27/2002	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 12062002 QC Prepared: 12/06/2002 QC Analyzed: 12/06/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.50	0.52	103	0.50	0.52	104	<1	80-120	<15

QC Batch No: 12062002 QC Prepared: 12/06/2002 QC Analyzed: 12/06/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Boron	0.4	0.4	<1	<15	0.50	0.53	105	80-120

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

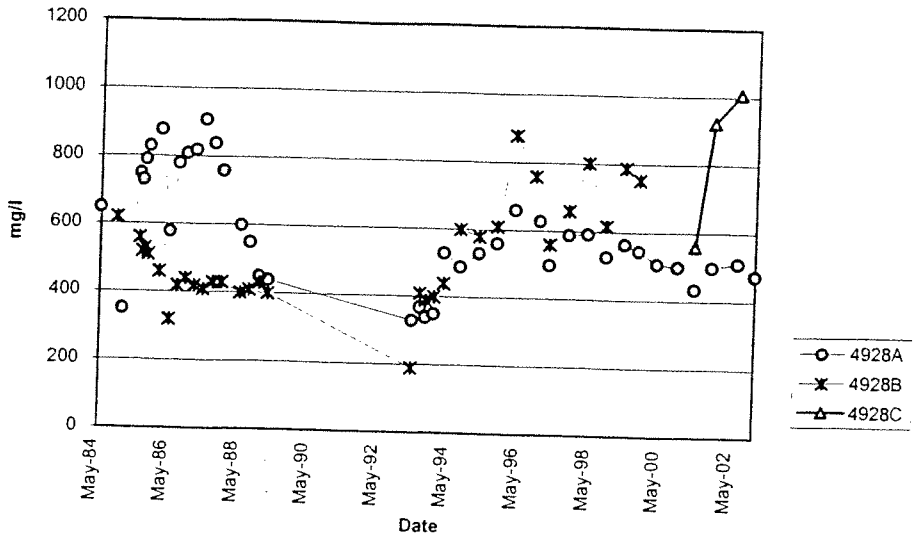
%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

APPENDIX E

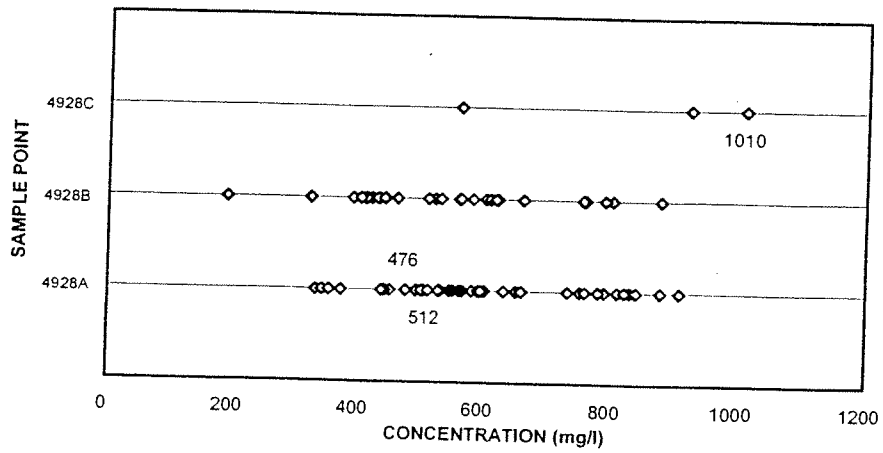
WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

TDS History
Strathern Landfill



TDS
Statistical Distribution

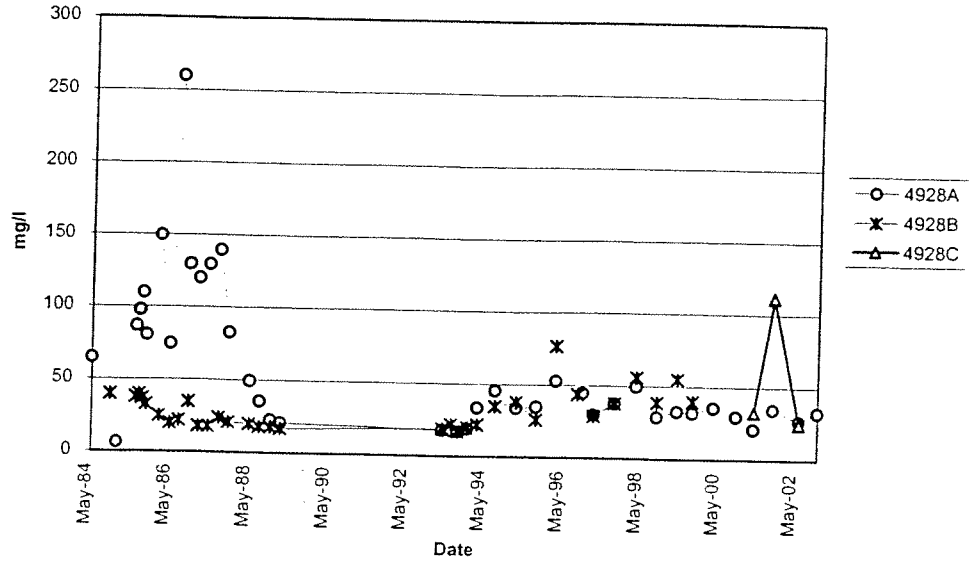


Data labels are for 2002 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

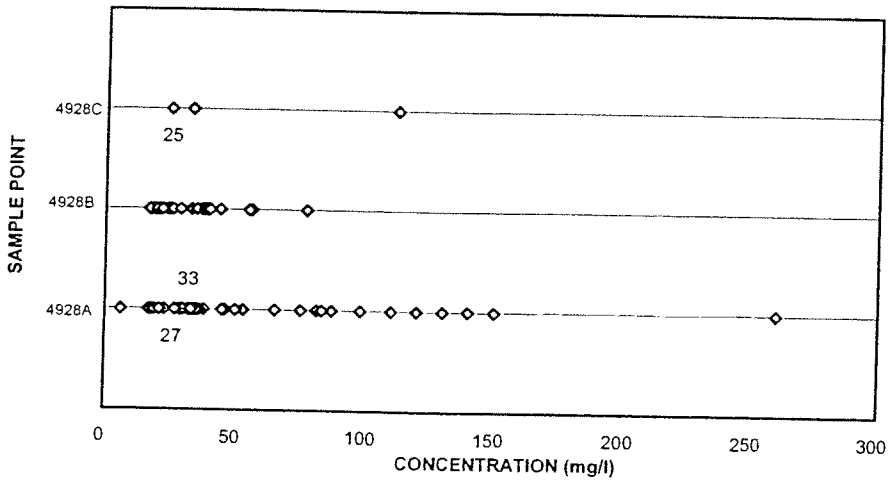
MACTEC

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

Cl History
Strathern Landfill



Cl
Statistical Distribution



Data labels are for 2002 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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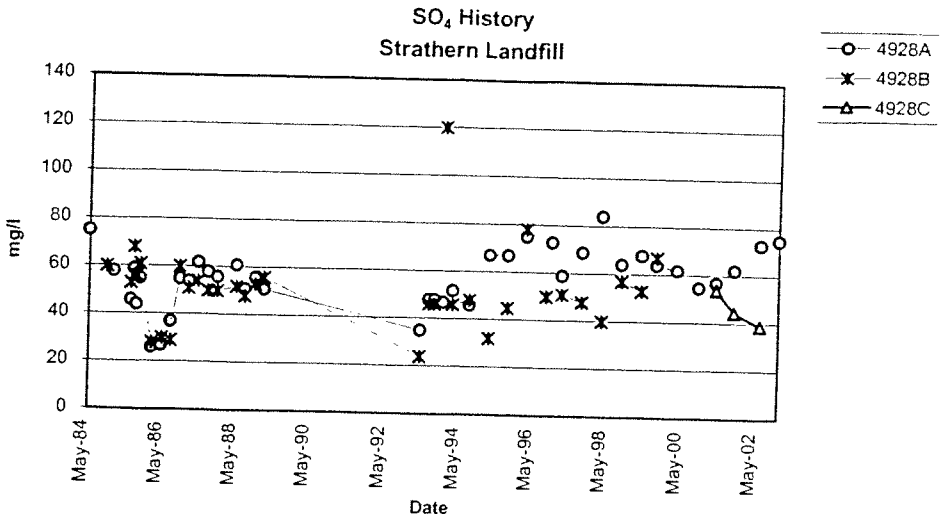
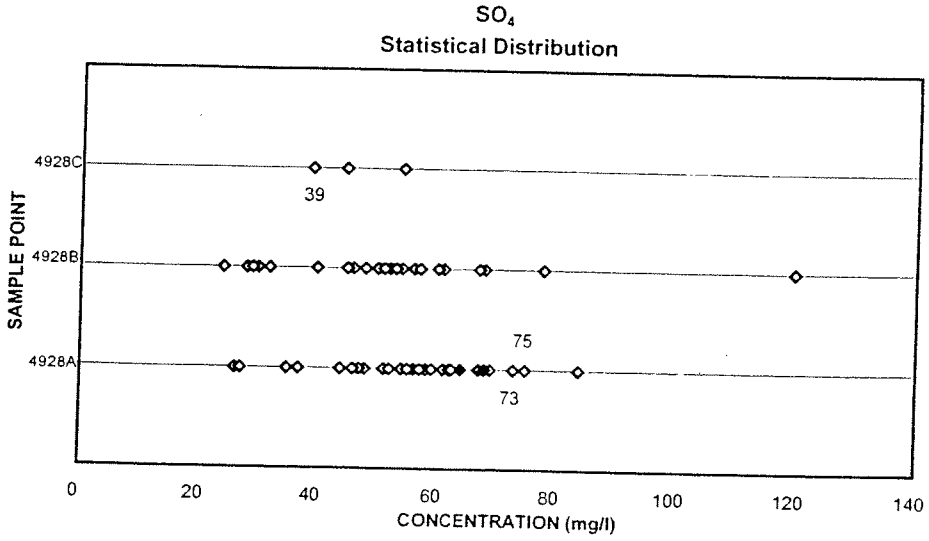
JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

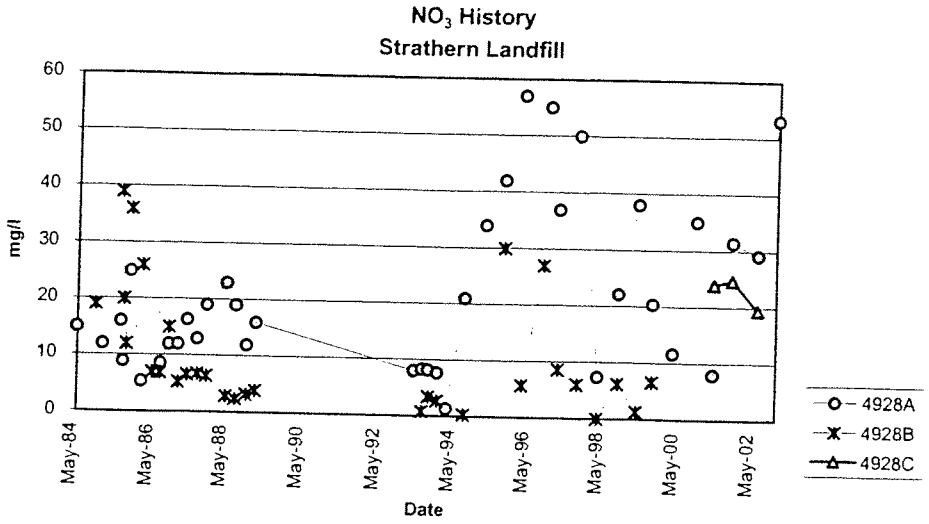


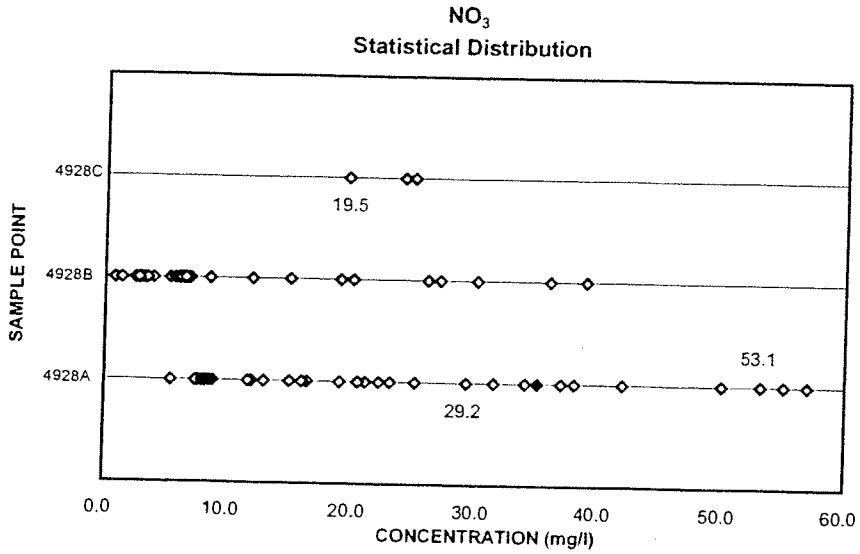


Data labels are for 2002 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

MACTEC

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____



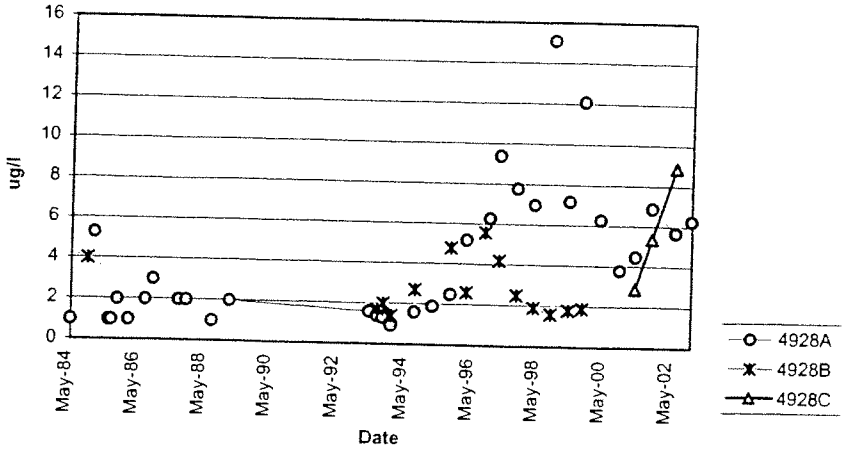


Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

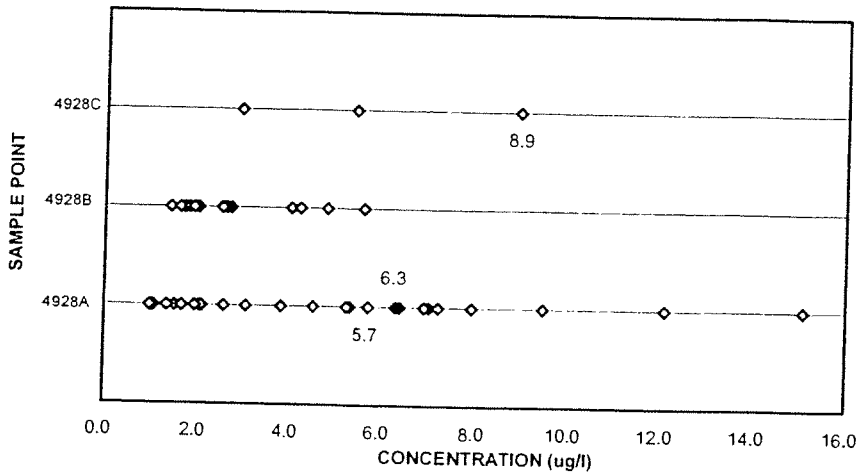
MACTEC

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

PCE History
Strathern Landfill



PCE
Statistical Distribution

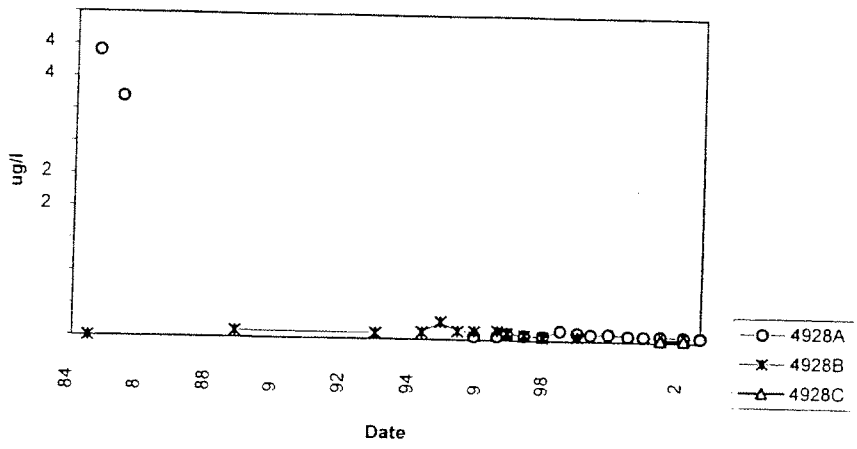


Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

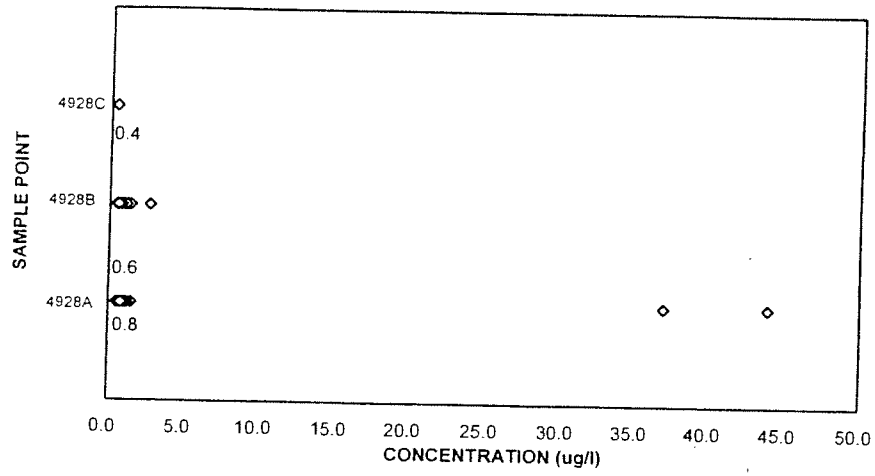
MACTEC

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

TCE History
Strathern Landfill



TCE
Statistical Distribution



Data labels are for 2002 monitonng year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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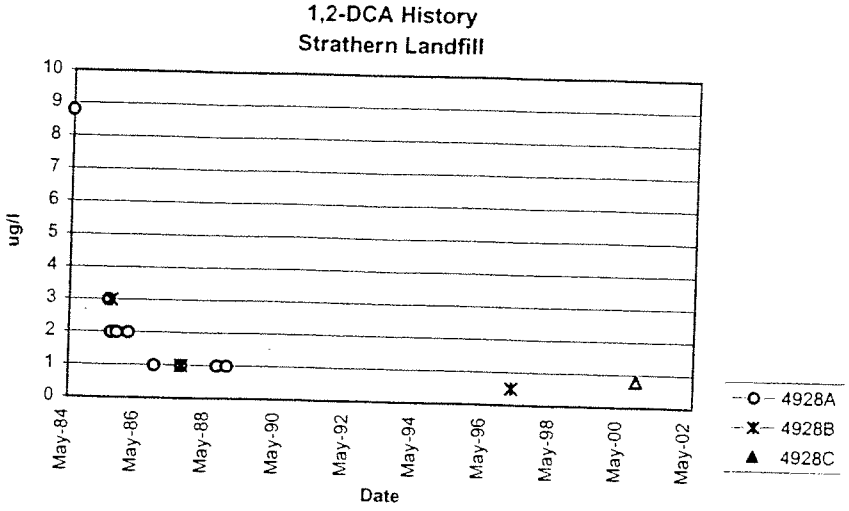
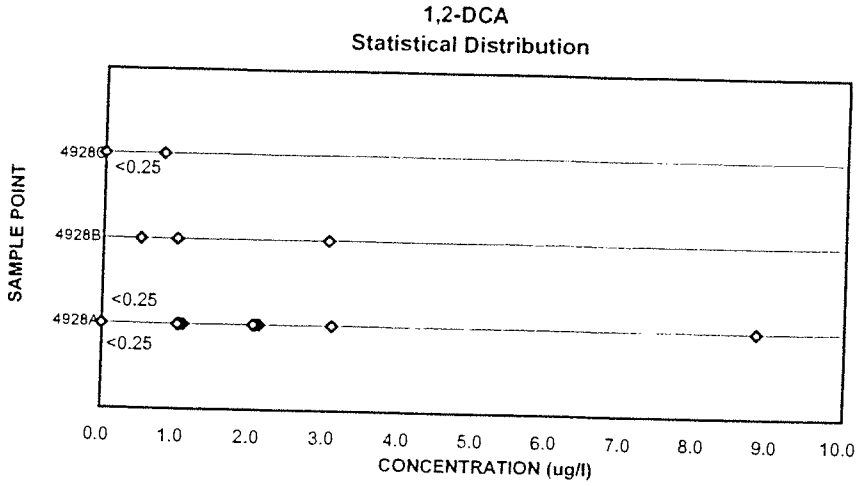
JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____





Data labels are for 2002 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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MONITORING WELL REDEVELOPMENT REPORT
WELL 4928C

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Los Alamitos, California

Prepared by

MACTEC Engineering and Consulting, Inc.

Los Angeles, California

November 25, 2003

MACTEC Project 4951-03-3551

MACTEC

003217

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MACTEC

November 25, 2003

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Monitoring Well Redevelopment Report**
Well 4928C
Strathern Landfill
Sun Valley, California
MACTEC Project 4951-03-3551

Dear Mr. McAllister:

MACTEC Engineering and Consulting, Inc., prepared this summary of the well development activities at Strathern Landfill in Sun Valley, California. This report describes our observation of redevelopment of groundwater monitoring well 4928C and installation of a new pump.

Well 4928C was drilled and constructed in February and March 1988. The top of the pump was placed at a depth of approximately 317 feet. At the request of the Regional Water Quality Control Board (RWQCB) an inflatable packer was installed below the pump. The top of the packer was placed at a depth of approximately 322 feet. In December 1992, the pump was lowered because of decreasing regional groundwater levels. Due to an accumulation of sediment in the bottom of the well casing, the pump and packer could only be lowered 37 feet, to a depth of approximately 354 feet. Groundwater levels in the vicinity of the site have continued to decline. Since November 2002, the water level in well 4928C has been too low to pump water to the surface for sampling. Los Angeles By-Products requested MACTEC to redevelop well 4929C and install a new pump in the well.

MACTEC Engineering and Consulting
200 Citadel Drive • Los Angeles, CA 90040
323-889-5300 • Fax: 323-721-6700

SCOPE OF SERVICES

MACTEC coordinated with the drilling contractor to complete the following activities at the site under the oversight of MACTEC personnel:

- Mobilize to site and set up well development equipment at well 4928C,
- Pull pump and discharge pipe from the well,
- Bail the well to remove accumulated sediments from the bottom of the well,
- Video log the well to observe the condition of the well casing and screen,
- Surge the length of the slotted casing (in segments as appropriate) using a surge block,
- Bail the well to remove sediments dislodged by surging,
- Install a new 3 H.P. Grundfos 16S30-24 Single Phase pump, discharge pipe and wiring in the well (see Appendix A).
- Pump water from the well until the following conditions are met:
  - Water characteristics of pH, temperature, and conductivity have stabilized and,
  - The water produced appears clear, suspended solids are minimal, and turbidity is 5 Nephelometric Turbidity Units (NTU) or less.

Cascade Drilling, Inc., of Norwalk, California (Contractor), State Contractor License C57-717510, developed the well. Pacific Surveys of Claremont, California video logged the well. MACTEC provided on-site technical monitoring as follows:

- Provided oversight and direction for the Contractor;
- Conducted a tailgate safety meeting prior to starting well development;
- Documented development methods and data including water quality data, pumping rate, and volume of water removed;
- Kept a daily log of field events, including visitors to the site; and
- Kept a photographic log of field events (see Appendix B).

MACTEC prepared this report for Los Angeles By Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

SUMMARY OF FIELD ACTIVITIES

This section summarizes our field activities during development of monitoring well 4928C. On October 31, 2003, Cascade Drilling, Inc., of Norwalk, California, removed the pump and discharge pipe from the well and bailed approximately 6 feet of sediment from the bottom of the well. The pump and discharge pipe were very rusty, and an approximately ½-inch diameter hole was observed in the discharge pipe about 5 feet above the pump (see Appendix B).

The water was allowed to settle over the weekend and on November 3, 2003, Pacific Surveys of Claremont, California video logged the well. The well casing and screen were observed to be in good condition. A copy of the video log on VHS video tape is enclosed.

On November 5, 2003, Cascade Drilling, Inc., developed the well by surging and bailing to remove fine sediments from the filter pack. The saturated portion of the well casing was surged using a surge block for approximately 30 minutes. A surge block was moved up down in 5-foot increments along the entire saturated portion of the casing. The well was then bailed until the remaining fine sediments were removed and the water had cleared. Approximately 1 foot of sand and about 260 gallons of water were removed from the well.

On November 14, 2003, Cascade Drilling, Inc., installed a new pump, discharge pipe and wiring in the well. The pump is a 3 H.P. Grundfos 16S30-24 Single Phase submersible pump, with a Franklin Model 2243022604 motor and control box. Appendix A presents the pump details. The bottom of the pump was set at a depth of approximately 371 feet below ground surface. The intake portion of the pump is at a depth of approximately 369 feet below ground surface.

The well was pumped until the temperature, electrical conductivity (EC), and pH had stabilized and the turbidity was less than 5 Nephelometric Turbidity Units (NTU). Table 1 presents the well development data.

We appreciate working with you on this project. If you have any questions or require further assistance, please call us at (213) 889-5300.

Sincerely,

MACTEC Engineering and Consulting, Inc.

Katherine V. Foley
Staff Geologist

Alex Lapostol
Principal Geologist

p:\70111 environmental\2003_proj\33551 (strathern landfill)\deliverables\33551 well devel.doc
(2 Copies Submitted)

TABLE

Table 1: Well Development Data

Well 4928C
Static Water Level = 352.95
Length of Discharge Pipe = 367 feet
Length of Pump and Motor = 3.8 feet
Bottom of Pump at 370.8 feet

Time	Water Level (feet bgs)	Temperature (°C)	pH (pH units)	Electrical Conductivity (µmhos/cm)	Turbidity (NTU)	Gallons pumped
12:09						
12:10	353.95					17
12:11	353.96					34
12:12	353.96					51
12:13	353.96					68
12:14	353.96	20.7	6.89	1300	10	85
12:19	353.96					170
12:24	353.96	21.1	6.66	1160	4	255
12:29	353.96					340
12:34	353.96					425
12:39	353.96	20.1	6.74	1270	4	510

bgs = below ground surface
µmhos/cm = micromhos per centimeter
NTU = nephelometric turbidity units

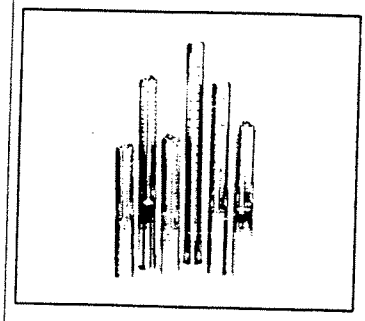
APPENDIX A

PUMP SPECIFICATIONS

GRUNDFOS

Company name: -
Created by: -
Phone: -
Fax: -
Date: -

Position	Count	Description	Single Price
	1	16S30-24	Price on request



Product No.: 10394524
Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-agressive liquids without solid particles or fibres.

The pump is made entirely of Stainless steel DIN W.-Nr. 1.4301 DIN W.-Nr. and suitable for horizontal as well as vertical installation. The pump is fitted with a built-in non-return valve.

The motor is a 1 -phase motor of the canned type with sand shield, liquid-lubricated bearings and pressure equalizing diaphragm.

Liquid:

Max liquid t at 0.08 m/sec:	86 °F

Technical:

Rated flow:	16.03 US GPM
Rated head:	492 ft

Materials:

Material, pump:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI
Material, impeller:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI
Material, motor:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI

Installation:

Size, pump outlet:	1 1/4" NPT
Motor diameter:	4" inch

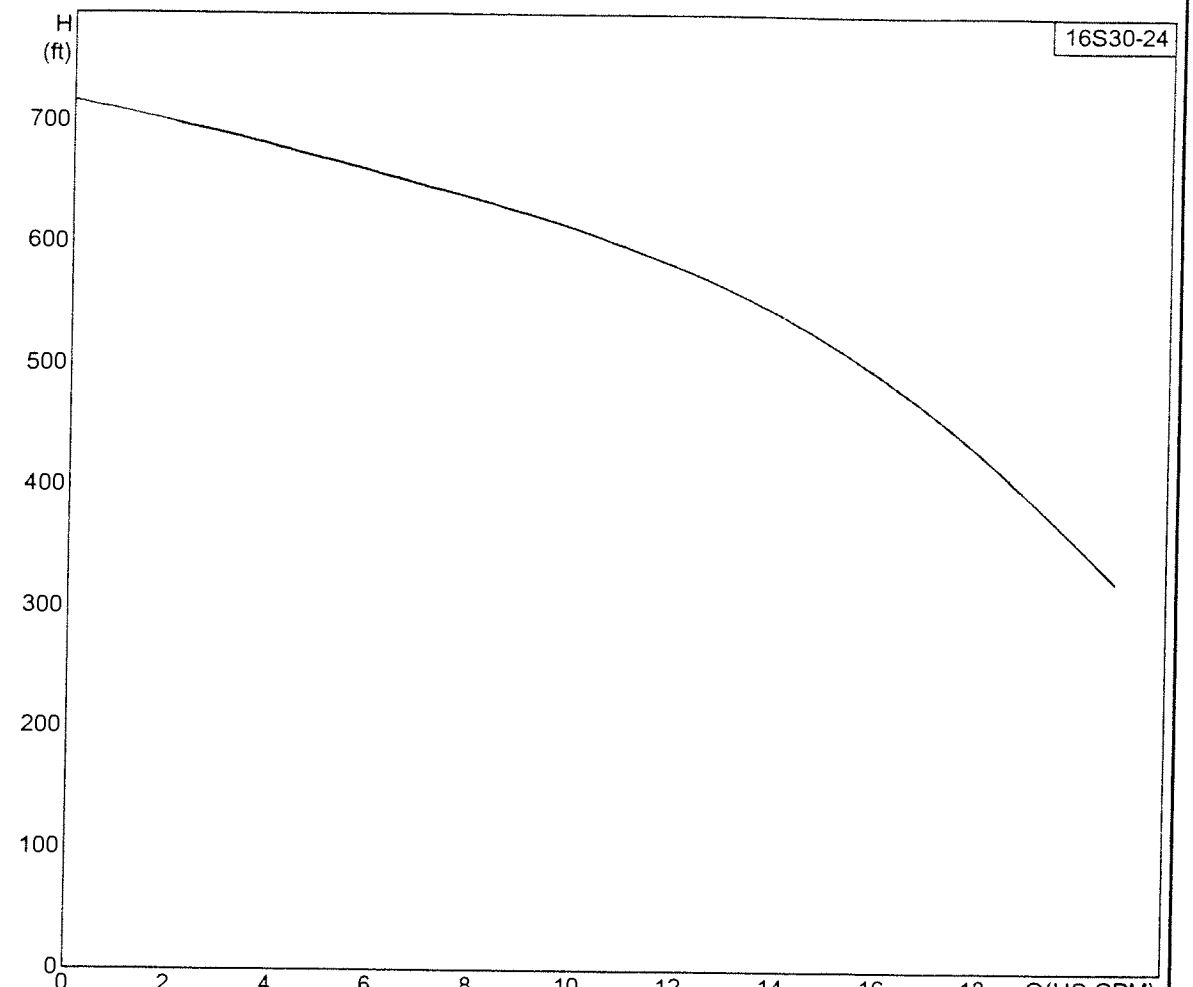
Electrical data:

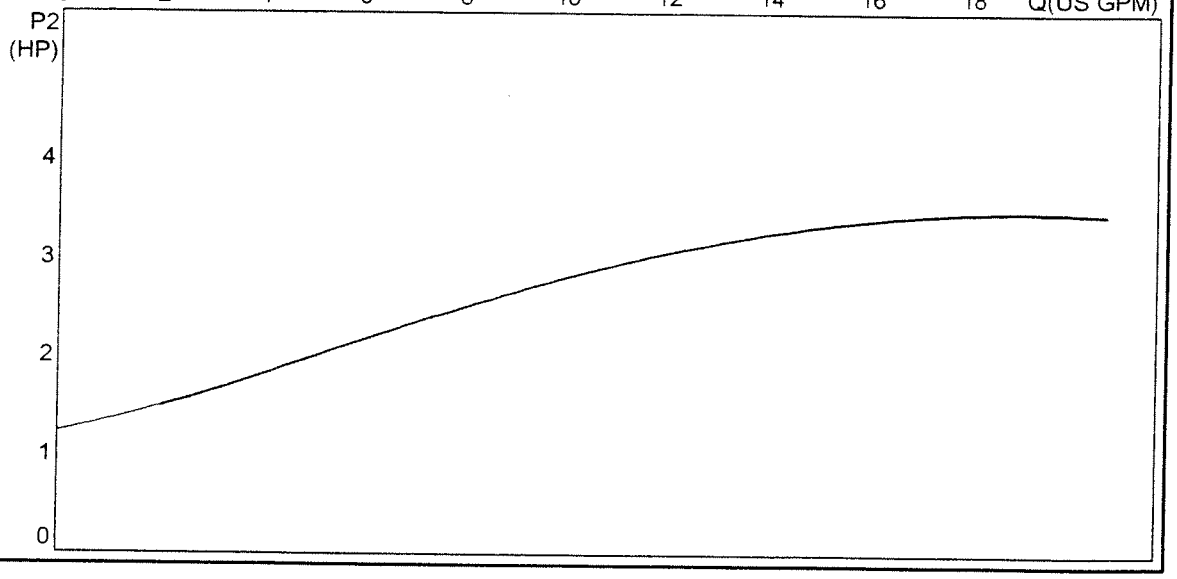
Motor type:	4" High Thrust
Rated power (P2):	3 HP
Mains frequency:	60 Hz
Rated voltage:	1 x 230 V
Starting method:	DOL
Rated current:	14 A
Service factor:	1.15
Rated current:	-17 A
Starting current:	82 A
Cos phi - power factor:	0.98
Rated speed:	3450 rpm
Full load motor efficiency:	70.9 %

GRUNDFOS

Company name: -
Created by: -
Phone: -
Fax: -
Date: -

10394524 16S30-24



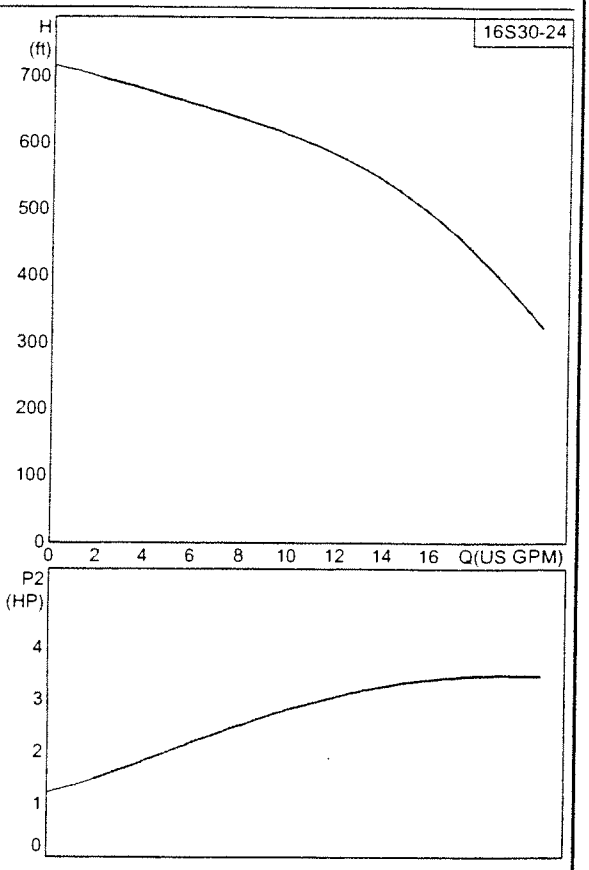


003226

GRUNDFOS

Company name: -
Created by: -
Phone: -
Fax: -
Date: -

Description	Value
Product Number	10394524
Product name	16S30-24
EAN number	5700394512787
Pump Number	10010024
Motor Number	96021136
Ctrl box product number	82F004 / 82F005
Stages	24
Start. method	DOL
Motor diameter	4" inch
P2	3 HP
Phase	1
U	230 V
Rated current	14 A
Service factor	1,15
I start	82 A
n	3450 rpm
Eff. 1/1	70,9 %
f	60 Hz
Rated flow	16.03 US GPM
Rated head	492 ft
Model	B
Motor type	4" High Thrust
Impeller	Stainless steel
Impeller	1.4301 DIN W.-Nr.
Impeller	304 AISI
Sales region	Namreg
Cos phi	0,98
Motor protection	Contact
Thermal protec	Internal
Pump outlet	1 1/4" NPT
Max flow	20 US GPM
I max	17 A
Pump	Stainless steel
Motor	Stainless steel
Motor	1.4301 DIN W.-Nr.
Motor	304 AISI
Pump	1.4301 DIN W.-Nr.
Pump	304 AISI
Axial load max	1500 lb
Applic. motor	Franklin 3-wire
Valve	Y
Min flow	2.07 US GPM
KVA code	G
Standard	45 A

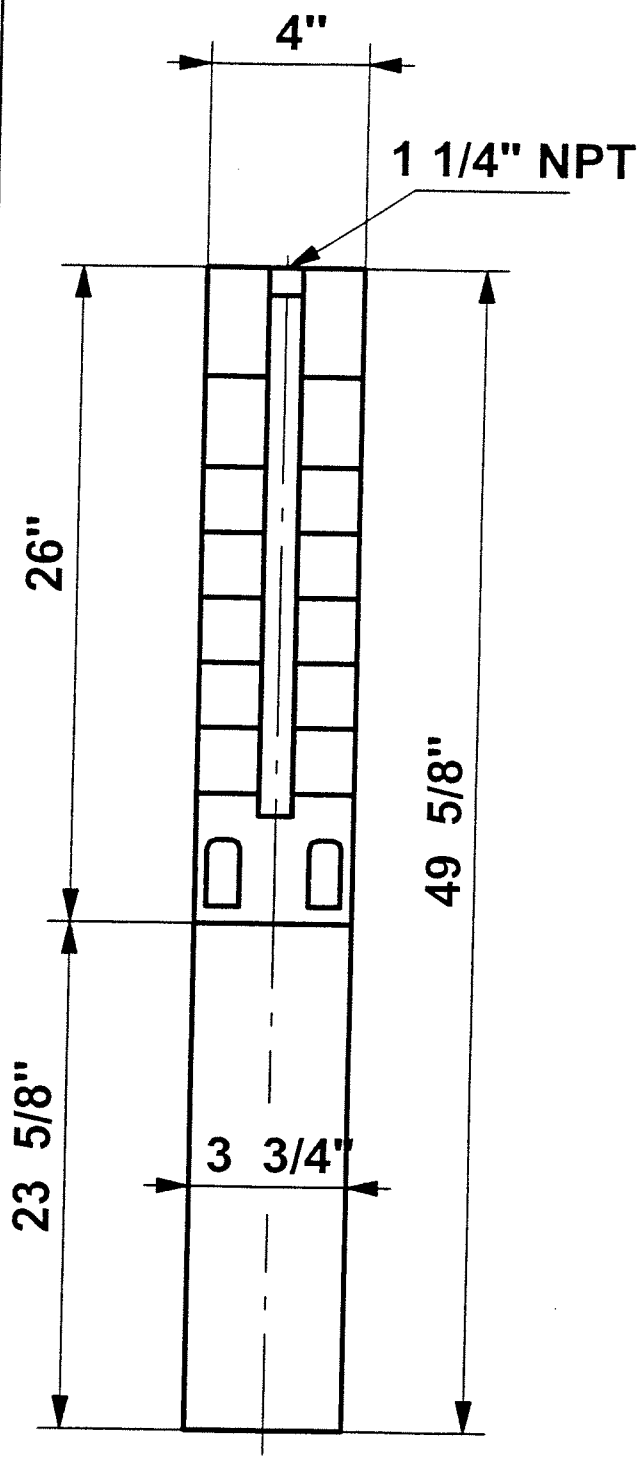


003227

GRUNDFOS

Company name: -
Created by: -
Phone: -
Fax: -
Date: -

10394524 16S30-24



Note! All units are in [mm] unless others are stated.

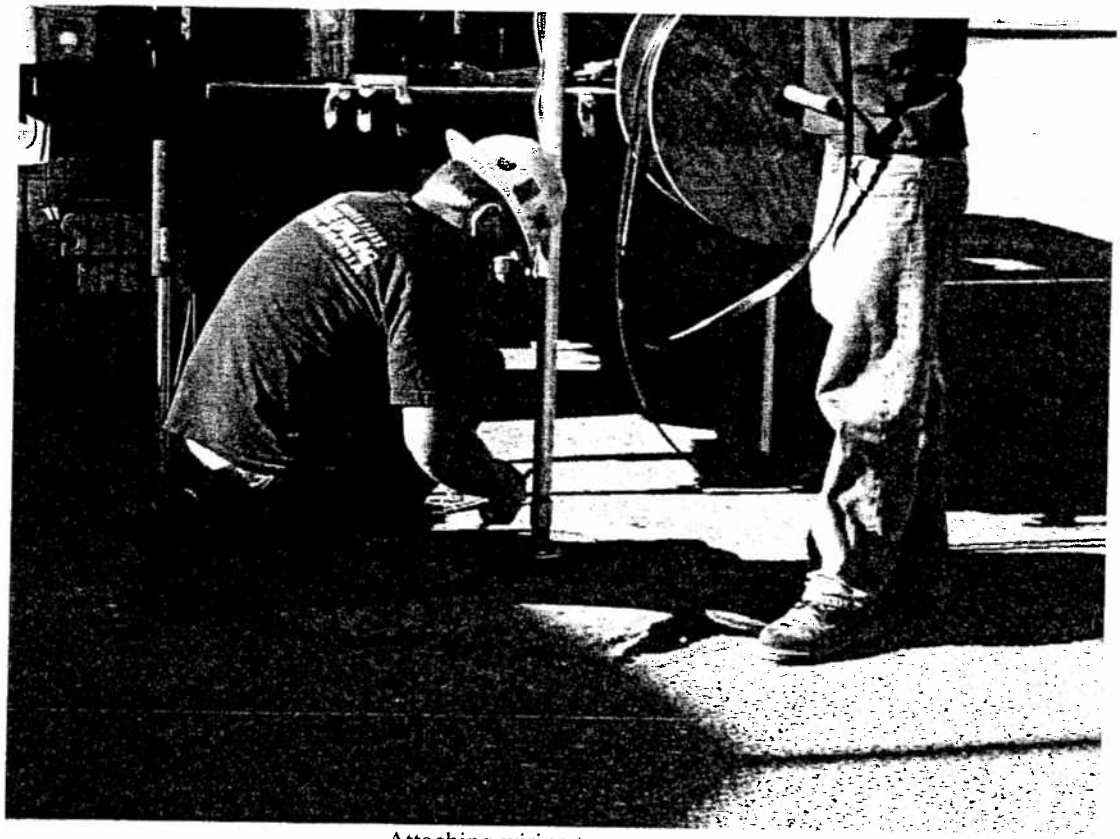
003228

APPENDIX B

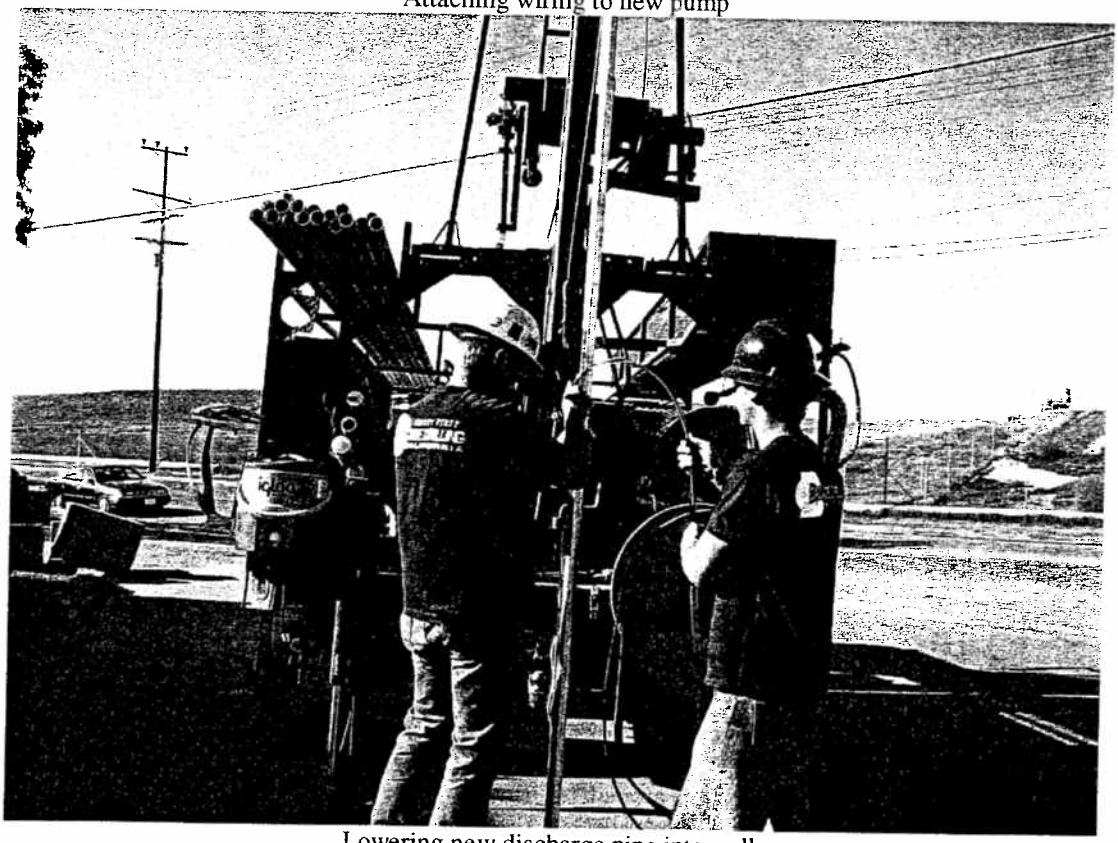
PHOTOGRAPHS

Old discharge pipe

Hole in old discharge pipe

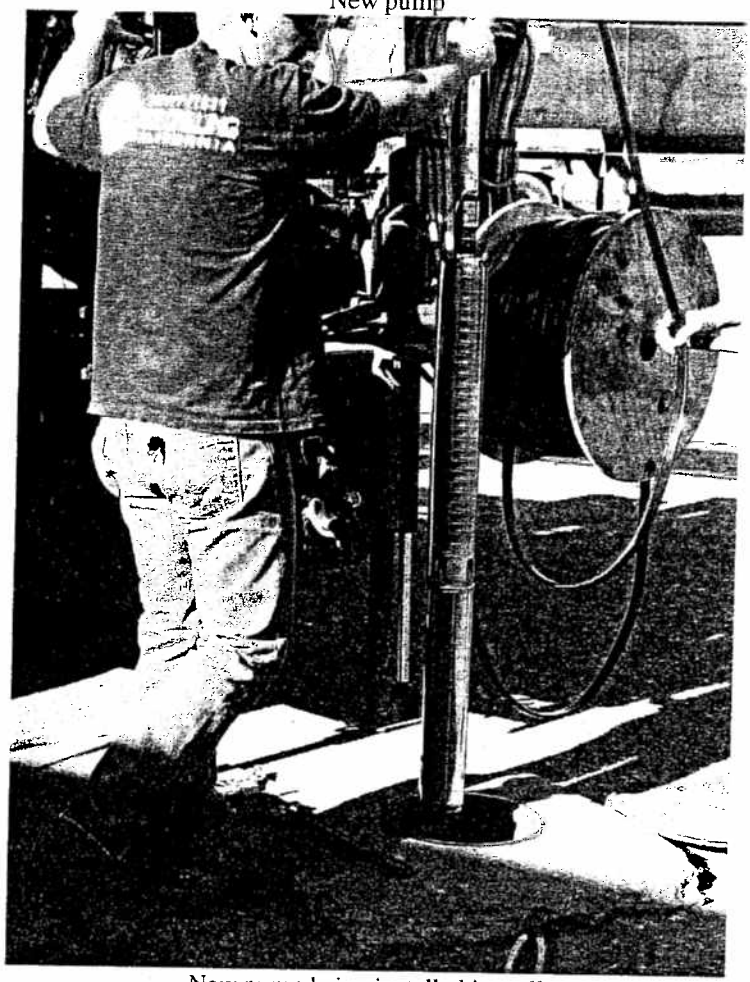


Attaching wiring to new pump



Lowering new discharge pipe into well

New pump



New pump being installed in well

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LAW

RESOURCES CREATING SOLUTIONS

SECOND QUARTER 2002 GROUNDWATER MONITORING AND WASTE DISPOSAL REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Los Alamitos, California

Prepared by

Law/Crandall
Los Angeles, California

July 12, 2002

Law/Crandall Project 70111-2-0346

003233

CONFIDENTIAL

LAW
RESOURCES CREATING SOLUTIONS

July 12, 2002

Mr. Mike McAllister
Los Angeles By-Products Company
4050 Katella Avenue, Suite 209
Los Alamitos, CA 90720-3482

Subject: **Second Quarter 2002**
Groundwater Monitoring and Waste Disposal Report
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the second quarter 2002 groundwater monitoring and waste disposal activities at the Los Angeles By-Products Company's Strathern Landfill. Law/Crandall (LAW) monitors the groundwater levels and groundwater quality at Strathern Landfill. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting on waste disposal activities and semi-annual monitoring of groundwater quality. Previously, groundwater monitoring was done during the first and third quarters by LAW, and waste disposal quantities were reported quarterly under separate cover by Los Angeles By-Products Company. However, on October 30, 2001, Mr. Dana Cole of the Regional Water Quality Control Board (RWQCB) requested that monitoring be done during the second and fourth quarters, and that reporting of waste disposal quantities be combined with the groundwater monitoring report. This monitoring report contains the results of the second quarter 2002 groundwater-monitoring and waste disposal.

Groundwater levels in the area have decreased since the third quarter 2001. Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B has been dry since the first quarter of 2000. Therefore on March 23, 2001, we requested and received

LAW Engineering and Environmental Services, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554
323-889-5300 • Fax: 323-721-6700

permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Groundwater measurements during the second quarter 2002, show that monitoring well 4928B continues to be dry.

The analytical results of monitoring show that groundwater from 4928C has similar characteristics as well 4928B. During the second quarter 2002, inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for boron in upgradient well 4928C and total dissolved solids (TDS) in both wells. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) in wells 4928A and 4928C during the second quarter 2002.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers

003235

34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires quarterly reporting on waste disposal activities and semi-annual monitoring of groundwater quality. This report covers these requirements for the second quarter of 2002. Law/Crandall collected groundwater samples in June 2002 and prepared this report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. The site's upgradient well 4928B has been dry since the first quarter of 2000. We received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

RESULTS

This section presents the monitoring results including waste disposal, groundwater levels, and groundwater quality.

WASTE DISPOSAL

Strathern Landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. During the second quarter 2002, Los Angeles By-Products received about 141,989 tons of solid inert waste from off-site sources. Table 2 shows the monthly quantities of wastes deposited during the first quarter. Figure 3 shows the approximate location of waste

disposal during the first quarter of 2002. The remaining capacity of the Strathern Landfill is about 5.3 million tons. The estimated remaining life of the site is 9.29 years.

The waste tonnage recorded in this report has been attested to, and certified by the President of Los Angeles By-Products Company. The certification of deposited waste is attached to the end of this report.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in June 2002. Groundwater levels in the area rose an average about 0.26 foot between the third quarter 2001 and second quarter 2002. The groundwater level in well 4928A fell 0.14 foot while the groundwater level in well 4928C rose 0.51 foot. Well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. Groundwater levels remain near the site's historic low groundwater surface levels. This is probably related to the past few dry summer seasons and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 1,935 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from August 2001 through May 2002. This may have contributed to the minor increase in groundwater levels in some wells. Figure 2 shows groundwater contours June 2002. Figure 4 contains the hydrographs for the three on-site wells. The groundwater database in Appendix A contains the water level data.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A and 4928C for the second quarter in June 2002. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from AETL of groundwater samples collected in June 2002. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 2002, the groundwater met California Drinking Water Standards for most constituents. Total dissolved solids (TDS) levels exceeded the secondary drinking water standard of 500 mg/l at wells 4928A and 4928C in June 2002. Table 3 shows selected results for the second quarter 2002 compared to California Drinking Water Standards.

Organics

Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, cis-1,2-DCE, and dichlorodifluoromethane. Up-gradient well 4928C contained trace amounts of TCE, PCE, and dichlorodifluoromethane. Levels were below California Drinking Water limits, except for PCE. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Although groundwater levels in the area rose an average about 0.26 foot between the third quarter 2001 and second quarter 2002, groundwater levels remain near the site's historic low. Due to an overall decrease in regional groundwater levels over the past two years, upgradient well 4928B has been dry since the first quarter of 2000. Other monitoring wells in the area used for groundwater level measurements are also dry. This is probably related to the past few dry summer seasons and minimal groundwater recharge efforts. Inorganic groundwater quality meets California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS). Organic groundwater quality meets California Drinking Water Standards for the parameters measured, except for PCE. There does not appear to be an association between landfill operations and changes in groundwater quality. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5356.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Katherine V. Foley
Staff Geologist

William J. O'Braitis, C.E.G. 2037
Principal Geologist

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(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

The undersigned certifies that all wastes were deposited in compliance with the Board's requirements, and that no wastes have been deposited outside the boundaries of the site as specified in the Board's requirements.

I declare under penalty of perjury that the foregoing information regarding waste disposal is true and correct. Executed this 12TH day of JULY, 2002, at Los Alamitos, California.

LOS ANGELES BY-PRODUCTS COMPANY

VICE PRESIDENT

Mike McAllister
President

TABLES

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

Table 2: Quantities of Sediments Deposited
Second Quarter 2002

Quarter	Month	Tons	Cubic Yards* (approximate)
2	April	52,688	35,125
	May	46,677	31,118
	June	42,624	28,416
TOTALS:		141,989	94,659

Prepared by: KVF/7-11-02
Checked by: LB/7-11-02

**1.5 tons per cubic yard*

Table 3: Site Water Quality vs. California Drinking Water Standards
Second Quarter 2002 Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source	
			4928A (downgradient)	4928C(upgradient)
			June 2002	June 2002
Field Measurements				
pH (pH units)	pH units	6—9	7.65	7.30
Electrical Conductivity	µmhos/cm	900*	766	1699
Carbon Dioxide	Ppm	—	26	115
Alkalinity	Ppm	—	363	824
Inorganic				
Total Dissolved Solids (TDS)	mg/L	500*	512	1010
Chloride (Cl)	mg/L	250*	27	25
Sulfate (SO_4)	mg/L	250*	73	39
Nitrate (NO_3)	mg/L	45	29.2	19.5
Boron (B)	mg/L	1**	0.3	0.9
Chemical Oxygen Demand (COD)	mg/L	—	8[J]	13
Bicarbonate (HCO3)	mg/L	—	282	670
Carbonate (CO3)	mg/L	—	<1	<1
Nickel (Ni)	mg/L	0.1	<0.05	<0.01
Iron (Fe)	mg/L	0.3	0.09	<0.03
Cadmium (Cd)	µg/L	5	<1	<10
Chromium (Cr)	µg/L	50	<10	<10
Lead (Pb)	µg/L	15**	<8	<50
Organic				
Trichloroethylene (TCE)	µg/L	5	0.8	0.4[J]
Tetrachloroethylene (PCE)	µg/L	5	5.7	8.9
Benzene	µg/L	1	<0.25	<0.25
Vinyl Chloride (VC)	µg/L	0.5	<0.25	<0.25

Prepared/Date: KVF/7-9-02
Checked/Date: LB/7-9-02

1 – Source: CCR, Title 22, Division 4, Chapter 15

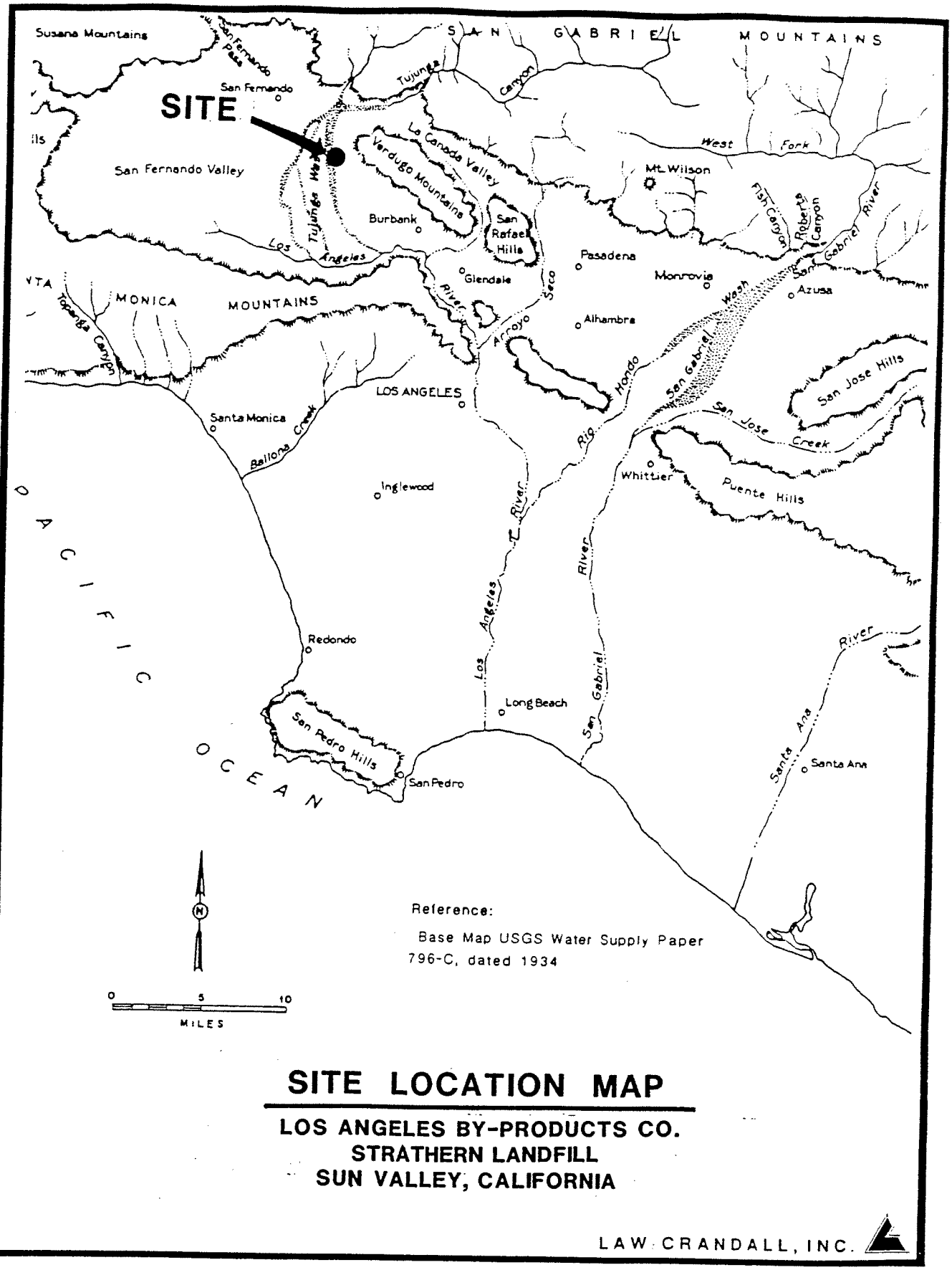
** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

FIGURES

CONFIDENTIAL



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003245

FORM 120 JOB 7011-2-0346 DATE 7-11-02 DR. O.E. KVF CHKD

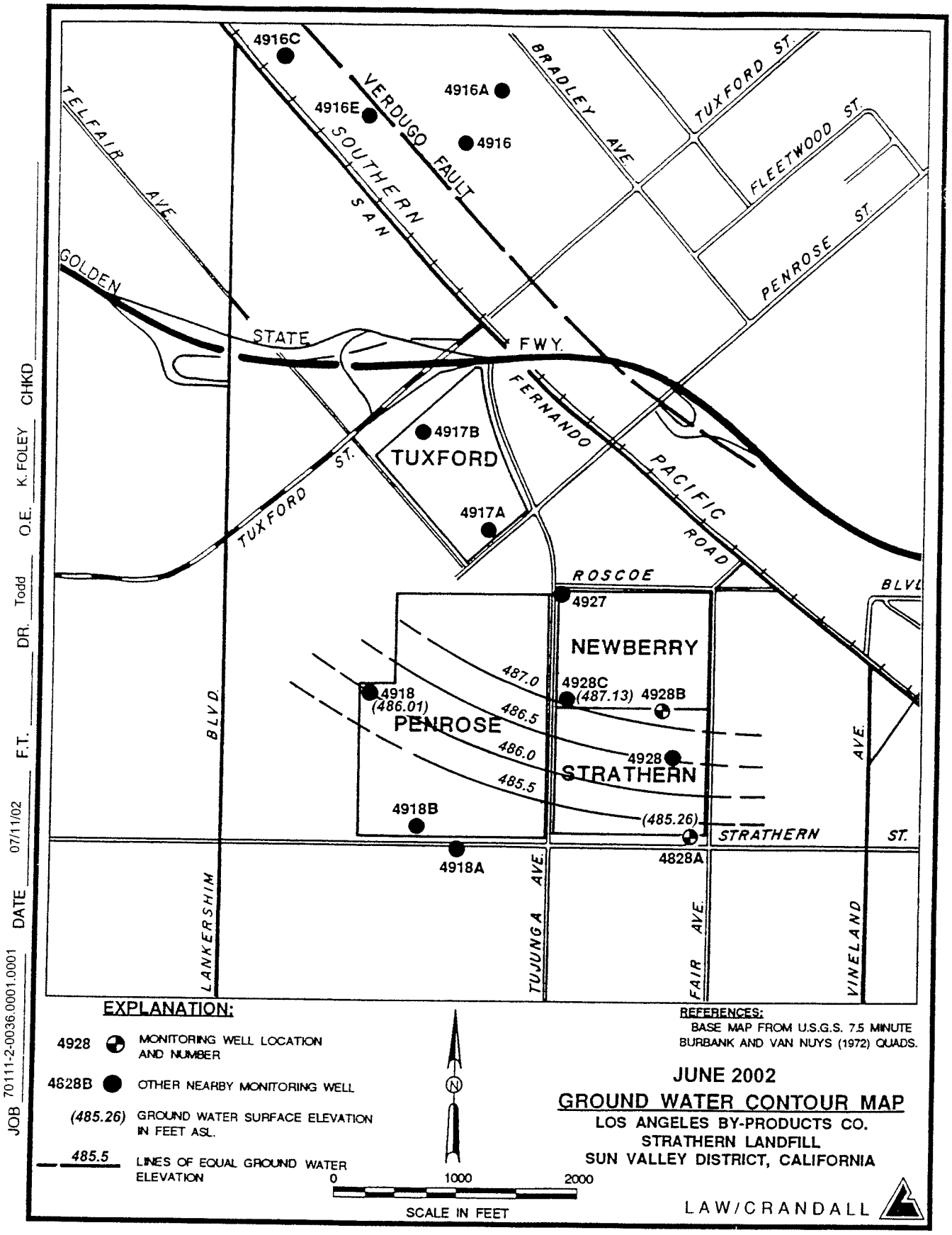
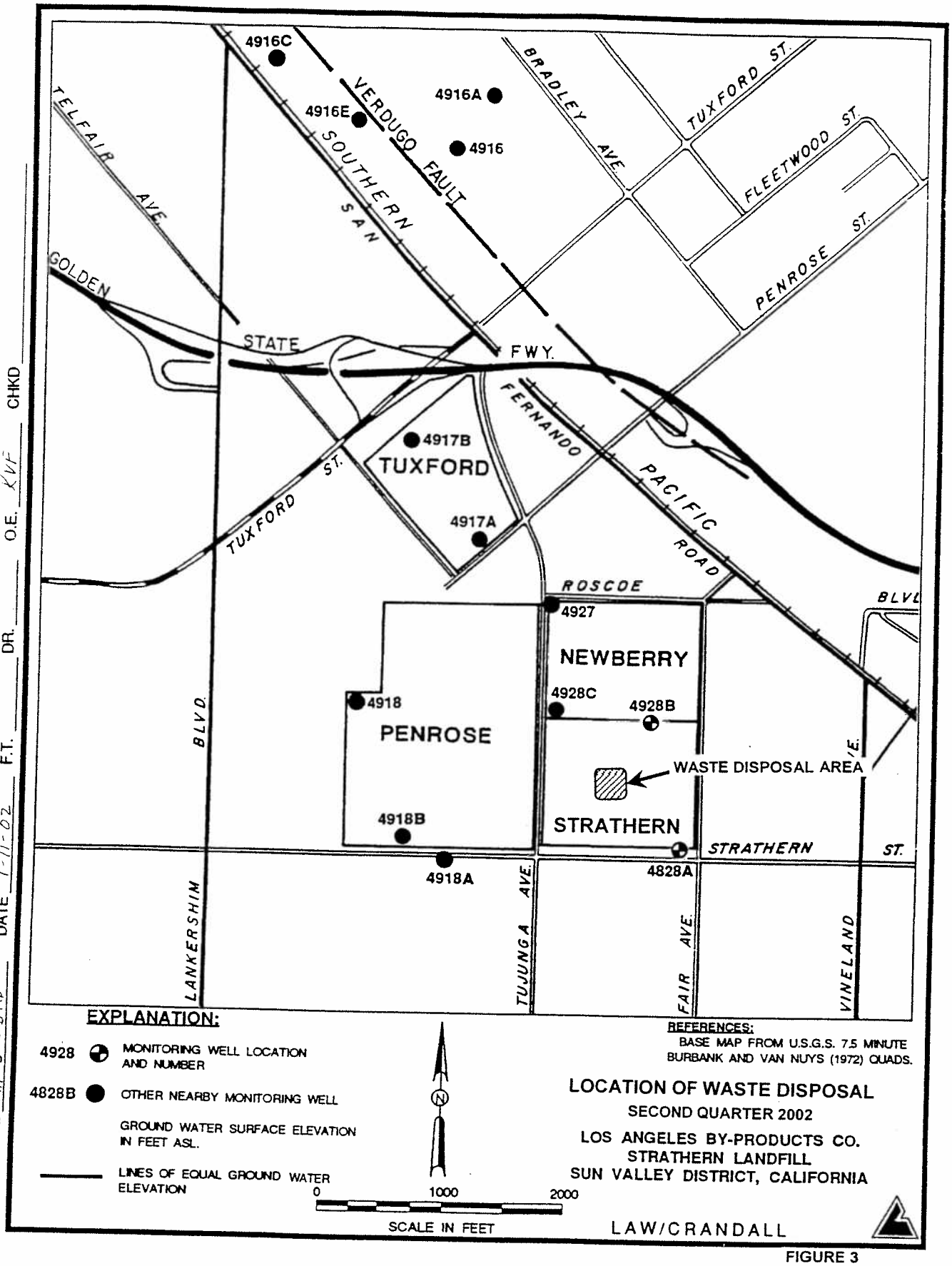

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE
GOLDEN STATE FWY.
FERNANDO
PACIFIC ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE BLVD
4927
NEWBERRY
487.0
4928C
(487.13)
4928B
4918
(486.01)
PENROSE
486.5
486.0
4928
STRATHERN
485.5
4918B
(485.26)
STRATHERN ST.
4828A
4918A
LANKERSHIM BLVD.
TUJUNGA AVE.
FAIR AVE.
VINELAND AVE.
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
(485.26) GROUND WATER SURFACE ELEVATION IN FEET ASL.
485.5 LINES OF EQUAL GROUND WATER ELEVATION
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
JUNE 2002
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL
JOB 70111-2-0036.0001.0001 DATE 07/11/02 F.T. DR. Todd O.E. K.FOLEY CHKD

FIGURE 2



JOB 2011-2-0346 DATE 7-11-02 F.T. ____ DR. ____ O.E. KVF CHKD ____

FIGURE 3

JOB 7011-2-6346 DATE 7-11-02 F.T. _____ DR. _____ O.E. KVF W.P. _____ CHKD _____

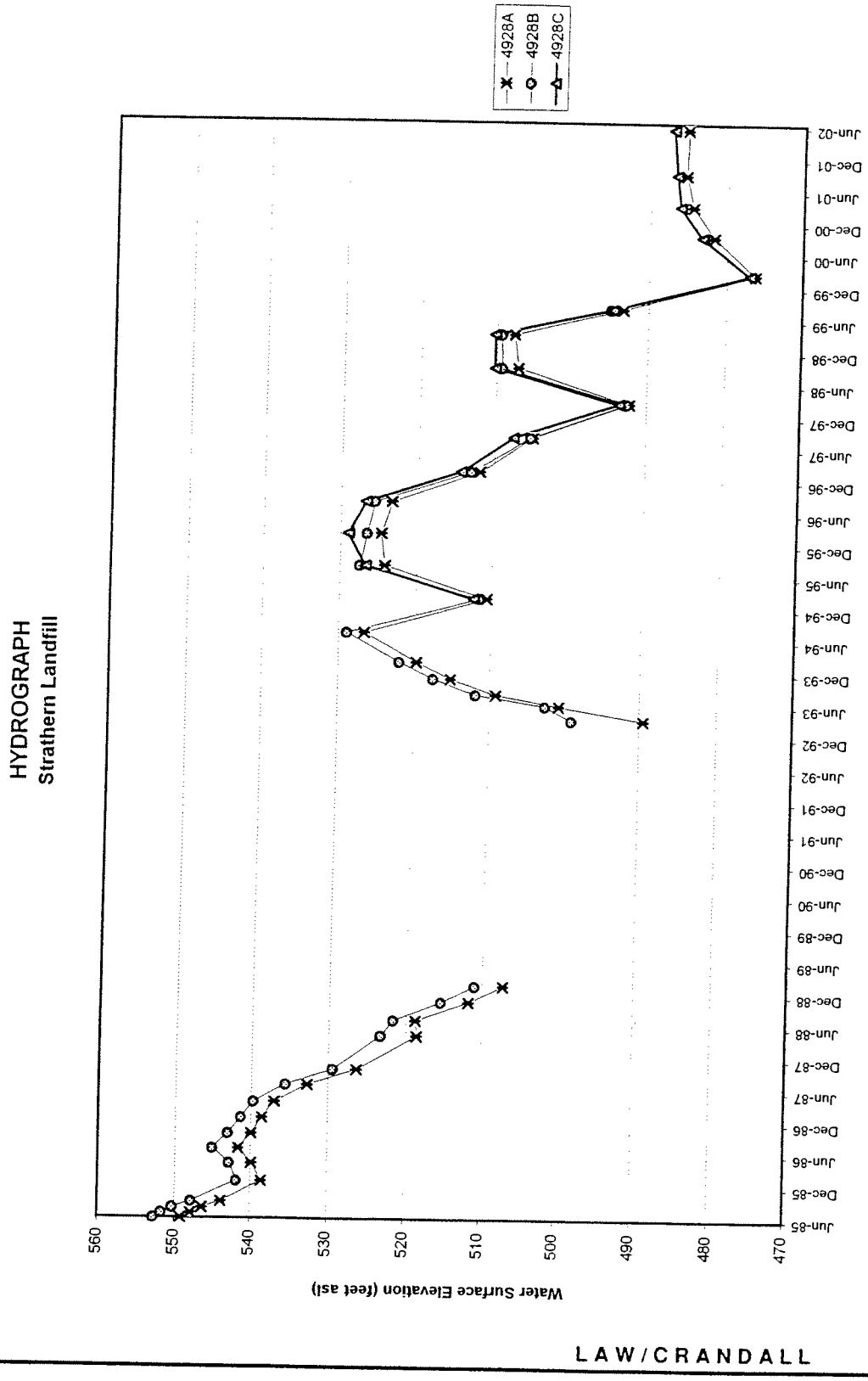


FIGURE 4

003248

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 7-9-02 F.T. _____ DR. _____ O.E. KF W.P. _____ CHKD LB

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL	FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT. W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL	pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs		6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	803.78							7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84							560	7.70	73	16	26	4.2	0.0	280
4928A	19-Jun-85	549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490
4928A	17-Jul-85	547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	620
4928A	14-Aug-85	546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610
4928A	19-Sep-85	543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670
4928A	16-Jan-86	538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620
4928A	29-Apr-86	539.84	6.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488
4928A	22-Jul-86	541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0.0	390
4928A	15-Oct-86	539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490
4928A	14-Jan-87	538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590
4928A	15-Apr-87	536.86	5.8	69	1100	42.5	490	1500	6.80	170	44	85	6.6	<0.6	650
4928A	24-Jul-87	803.1 532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630
4928A	21-Oct-87	526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590
4928A	29-Apr-88	518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6.4	<0.6	480
4928A	28-Jul-88	518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442
4928A	08-Nov-88	511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370
4928A	07-Feb-89	803.78 507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350
4928A	02-Apr-93	489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320
4928A	22-Jun-93	500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290
4928A	24-Aug-93	509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290
4928A	19-Nov-93	515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290
4928A	21-Feb-94	519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430
4928A	05-Aug-94	526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330
4928A	20-Feb-95	510.49						830	6.90	97	25	36	5.3	<0.6	390
4928A	24-Aug-95	524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330
4928A	23-Feb-96	524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380
4928A	23-Aug-96	523.41													
4928A	11-Sep-96	NM													
4928A	31-Oct-96	516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97	511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390
4928A	28-Aug-97	504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400
4928A	12-Mar-98	492.23	7.30	68	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320
4928A	21-Sep-98	507.01	7.17	66	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358
4928A	30-Mar-99	507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324
4928A	25-Aug-99	493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332
4928A	10-Mar-00	476.16	7.25	64	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296
4928A	09-Oct-00	481.63	6.76	67	800	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286
4928A	29-Mar-01	484.40	7.44	65	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290
4928A	25-Sep-01	485.40	8.10	68	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288
4928A	05-Jun-02	485.26	7.65	66	786	26	363	761	7.20	88.6	24.1	34.5	15.8	<1	282

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	WATER LEVEL REF PT. W S E		FIELD MEASUREMENTS fpH	T(f)	fEC	CO2	Alk	GENERAL MINERALS EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450
4928B	17-Jul-85		551.71	8.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380
4928B	18-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340
4928B	29-Apr-86		542.88	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.8	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	800
4928B	12-Mar-98		492.50	7.0	73.8	1152		502	1110	7.00	97	35	81	9	<2.0	502
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928C	20-Feb-95	823.37	512.30													
4928C	24-Aug-95		526.72													
4928C	23-Feb-96		528.98													
4928C	23-Aug-96		526.79													
4928C	14-Feb-97		514.27													
4928C	26-Aug-97		507.48													
4928C	12-Mar-98		493.57													
4928C	21-Sep-98		510.16													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		494.57													
4928C	10-Mar-00		476.92													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612
4928C	19-Jun-02		487.13	7.30	77.5	1699	115	824	1580	7.00	151	39.8	98.3	8.41	<1	670

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB SOURCE
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928A	03-May-84	75	65	15.0			650			1			1.0		0.70	10	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.22			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.08	<1	1					0.06			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	18-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.083			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<10		<0.1	<20		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<10		<0.03	<20	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<10		<0.02	<10	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<20		<0.02	<20	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<20		0.12	<10	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		600	11.0	<1	<1			<20		0.32	4	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<1		<0.02	<2	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<1		<0.02	<2	<0.04	B&C
4928A	07-Feb-89	51	21	18.0	0.05		440	<5	<1	2			<1		0.92	7	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<8	<0.5	1.6			<1		0.20	5	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<1		0.12	3	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<1		0.17	4	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<8	<0.5	0.9			<1		0.13	3	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<1		0.76	4	<0.04	B&C
4928A	05-Aug-94	46	46	21	0.26		490		<0.5	1.6			<3		0.42	5	<0.005	B&C
4928A	20-Feb-95	87	34	34	<0.05		530	21	<0.5	1.9			<5	<10	7.80	99	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<5	<10	0.35	10	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<1	<10	2.80	27	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-98	73	45	55	0.26		630	<6	0.56	6.3			<10	<10	0.15	<50	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<5	<10	<0.04	<50	<0.04	VOC
4928A	28-Aug-97	69	38	50	0.25		590	<6	0.69	7.8			<5	<10	0.13	<50	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.6		593	<10	0.6	7.0			<5	<10	0.15	<50	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<5	<10	0.95	<50	<0.04	AETL
4928A	30-Mar-99	88	33	38	0.3		565	<8	1.2	7.2			<5	<10	0.18	<50	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<5	<10	<0.05	<50	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<5	<10	0.08	<50	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<5	20	<0.03	<50	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<10	<10	0.06	<50	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<10	10'	0.23	<50	<0.01	AETL
4928A	05-Jun-02	73.0	27	29.2	0.3	332	512	8'	0.8	5.7	<0.25	<0.25	<1	<10	0.09	<8	<0.05	AETL

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JOB 70111-2-0346 DATE 7-9-02 F.T. _____ DR. _____ O.E. KF W.P. _____ CHKD CB

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
	UNITS	SO4 mg/L	Cl mg/L	NO3 mg/L	B mg/L	HARD mg/L	TDS mg/L	COD mg/L	TCE µg/L	PCE µg/L	BENZENE µg/L	VC µg/L	Cd µg/L	Cr µg/L	Fe mg/L	Pb µg/L	Ni µg/L	
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928B	23-Oct-84	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	81	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	16-Jan-88	28	25	26.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-88	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-88	60	35	15.0	0.3		440	<0.05	<1	<1			<10		0.29	<20		B&C
4928B	14-Jan-87	51	18	5.3	0.5		420	0.10	<1	2			<10		<0.03	<20	<0.06	B&C
4928B	15-Apr-87	54	18	6.6	0.4		410	0.08	<1	2			<10		0.88	<10	<0.04	B&C
4928B	24-Jul-87	50	24	6.8			430	<0.05	<1	4			<20		<0.02	<20	<0.04	B&C
4928B	21-Oct-87	50	21	6.4	0.25		430	<0.05	<1	<1			<20		0.20	<10	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7.0	<1	3			<20		5.70	13	<0.004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	6.0	<1	4			<1		<0.02	<2	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0.16		430	<3	<1	4			<1		0.04	<2	<0.04	B&C
4928B	07-Feb-89	58	17	3.9	<0.02		400	<5	1	5			<1		2.20	3	<0.04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0.5			5		0.82	49	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1.7			1		14	24	<0.04	B&C
4928B	24-Aug-93	46	17	3.4			390	<6	<1	2.0			<1		17	18	<0.04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0.5	1.4			<1		82	3	<0.04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0.5	<0.5			<1		87	13	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0.27		600		1.1	2.7			<3		7.9	17	<0.005	B&C
4928B	20-Feb-95	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<5	<10	2.4	18	<0.04	B&C
4928B	24-Aug-95	45	26	30	<0.2		610	<6	1.3	4.8			<5	<10	18	14	<0.04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2.6			<1	<10	24	7.6	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0.31		760		1.4	5.6			<10	<10	<0.4	<50	<0.04	BCA
4928B	14-Feb-97	51	29	8.6	<0.2		560	15	1.1	4.2			<5	<10	0.063	<50	<0.04	VOC
4928B	26-Aug-97	48	38	6	0.21		660	34	0.78	2.5			<5	<10	0.27	<50	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		802	<10	0.5	1.9			<5	<10	51.5	140	<0.04	AETL
4928B	21-Sep-98	57	39	6.2	0.3		818	<8	<0.5	1.6			<5	<10	44.5	<50	<0.04	AETL
4928B	30-Mar-99	53	55	1.3	0.3		789	<6.0	0.6	1.8			<5	<10	34.4	<50	<0.04	AETL
4928B	25-Aug-99	67	40	6.6	0.3		754	<8.0	<0.5	1.9			<5	<10	0.33	<50	<0.04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	

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JOB 70111-2-0346 DATE 7-9-02 F.T. _____ DR. _____ O.E. KF W.P. _____ CHKD LB

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	5	50	0.3	50	100	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	28-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<5	<10	2.44	<50	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<10	20J	0.4	<50	<0.01	AETL
4928C	19-Jun-02	39	25	19.5	0.9	800	1010	13	0.4J	8.9	<0.25	<0.25	<10	<10	<0.03	<50	<0.01	AETL

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 06/05/2002
Date Reported 06/18/2002

Job Number	Order Date	Client
22135	06/05/2002	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern
Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: G. Mreli

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003200

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CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Brait13 /Attn: Sto Aban
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-2-0346
SITE NAME AND ADDRESS: Strathern, Sun Valley, CA

AETL JOB No. 22135

Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	ANALYSIS REQUESTED: General Minerals	Boron, COD	Cd, Cr, Ni, Pb	524.2	TEST INSTRUCTIONS & COMMENTS
4928A	AE116654	6-5-02	1120	water	various	—	X	X	X	X	
4928C		6-5-02			various	—	X	X	X	X	
Trip Blank	AE116655	6-5-02		↓	Voa	—				X	

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	6	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / (N) NA		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Aban	Signature:	Signature:
Printed Name: Sto Aban	Printed Name:	Printed Name:
Date: 6-5-02 Time: 1325	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: G. Morelli
Printed Name:	Printed Name:	Printed Name: G. Morelli
Date: Time:	Date: Time:	Date: 6-5-02 Time: 15:25

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

003261

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ANALYTICAL RESULTS

Ordered By

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200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Our Lab I.D.				AE116654	AE116655		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			06/05/2002	06/05/2002	06/05/2002		
Date Prepared			06/05/2002	06/05/2002	06/05/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			06/07/2002	06/07/2002	06/07/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	1.6	ND		
1,1-Dichloroethane	0.25	0.50	ND	3.3	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Our Lab I.D.				**AE116654**	**AE116655**		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			06/05/2002	06/05/2002	06/05/2002		
Date Prepared			06/05/2002	06/05/2002	06/05/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			06/07/2002	06/07/2002	06/07/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.6	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	5.7	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.8	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE116654	AE116655		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		110	82	80		
1,2-Dichlorobenzene	75-125		101	90	97		

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Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: VARIOUS QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Our Lab I.D.				**AE116654**			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			06/05/2002	06/05/2002			
Date Prepared			06/05/2002	06/05/2002			
Preparation Method			Various	Various			
Date Analyzed			06/16/2002	06/16/2002			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	282			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	282			
Anions Total (meq/L)	0.01	0.01	NA	8.42			
Cations Total (meq/L)	0.01	0.01	NA	8.35			
Ion Balance (percent difference)	0.01	0.01	NA	0.42			
Nitrate	0.05	0.10	ND	29.2			
Nitrite	0.01	0.02	ND	ND			
Total Dissolved Solids	5	10	ND	512			
Chloride (Cl), Total	0.5	1.0	ND	27			
Conductivity (umhos/cm @77F)	5	10	ND	761			
Fluoride, Total	0.1	0.2	ND	0.5			
Hardness (Ca,Mg) as CaCO3	1	2	ND	332			
pH (pH units)	0.01	0.01	NA	7.20			
Sulfate	5	10	ND	73			
Surfactants (MBAS)	0.03	0.05	ND	0.09			
Aluminum	0.05	0.10	ND	1.79			
Calcium	0.25	0.50	ND	88.6			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	0.09			
Magnesium	0.25	0.50	ND	24.1			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	15.8			
Sodium	0.25	0.50	ND	34.5			
Zinc	0.01	0.03	ND	0.20			

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Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Our Lab I.D.							N/A	AE116654	
Client Sample I.D.							Method Blank	4928A	
Date Sampled							06/05/2002	06/05/2002	
Matrix							Aqueous	Aqueous	
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Cadmium	1	200.7	mg/L	0.001	0.005	06/16/2002	ND	ND	
Chromium	1	200.7	mg/L	0.010	0.050	06/16/2002	ND	ND	
Lead	1	200.7	mg/L	0.008	0.015	06/16/2002	ND	ND	
Nickel	1	200.7	mg/L	0.05	0.10	06/16/2002	ND	ND	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/10/2002	ND	8J	
Boron	1	SM-4500B	mg/L	0.1	0.2	06/05/2002	ND	0.3	

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 200.7, Metals (Cd,Cr,Pb,Ni)

QUALITY CONTROL REPORT

QC Batch No: 06142002 QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15	
Chromium	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15	
Lead	1.00	0.98	98	1.00	0.95	95	3.1	80-120	<15	
Nickel	1.00	0.98	98	1.00	0.98	98	<1	80-120	<15	

QC Batch No: 06142002 QC Prepared: 06/14/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	0.98	98	80-120						
Chromium	1.00	0.97	97	80-120						
Lead	1.00	0.95	95	80-120						
Nickel	1.00	0.99	99	80-120						

003267

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
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Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 06102002 QC Prepared: 06/10/2002 QC Analyzed: 06/10/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.00	98	50.00	48.50	97	1.0	80-120	<15	

QC Batch No: 06102002 QC Prepared: 06/10/2002 QC Analyzed: 06/10/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	5J	5J	<1	<15	50.00	50.50	101	80-120		

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 06072002 QC Prepared: 06/07/2002 QC Analyzed: 06/07/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.00	53.00	106	50.00	52.00	104	1.9	75-125	<20	
Chlorobenzene	50.00	44.50	89	50.00	49.00	98	9.6	75-125	<20	
1,1-Dichloroethene	50.00	45.50	91	50.00	44.00	88	3.4	75-125	<20	
Toluene (Methyl benzene)	50.00	47.50	95	50.00	49.00	98	3.1	75-125	<20	
LCS										
Chloroform (Trichloromethane)	50.00	50.50	101	50.00	48.00	96	5.1	75-125	<20	
Ethylbenzene	50.00	45.50	91	50.00	50.50	101	10.4	75-125	<20	
1,1,1-Trichloroethane	50.00	45.00	90	50.00	45.50	91	1.1	75-125	<20	
Trichloroethene	50.00	49.50	99	50.00	47.50	95	4.1	75-125	<20	
o-Xylene	50.00	50.50	101	50.00	50.00	100	<1	75-125	<20	
m,p-Xylenes	100.00	91.00	91	100.00	99.00	99	8.4	75-125	<20	

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Telephone: (323)889-5300
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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	22.00	110	9.5	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	22.00	110	9.5	80-120	<15	
Nitrate	0.50	0.47	94	0.50	0.46	91	3.2	80-120	<15	
Nitrite	0.20	0.19	97	0.20	0.19	97	<1	80-120	<15	
Chloride (Cl), Total	20.00	20.60	103	20.00	19.60	98	5.0	80-120	<15	
Fluoride, Total	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Sulfate	20.00	18.80	94	20.00	19.00	95	1.1	80-120	<15	
Surfactants (MBAS)	0.20	0.19	95	0.20	0.20	100	5.1	80-120	<15	
Aluminum	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15	
Calcium	1.00	1.01	101	1.00	1.02	102	<1	80-120	<15	
Copper	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	
Iron	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Magnesium	1.00	1.02	102	1.00	1.04	104	1.9	80-120	<15	
Manganese	1.00	0.96	96	1.00	0.96	96	<1	80-120	<15	
Potassium	1.00	0.96	96	1.00	0.98	98	2.1	80-120	<15	
Sodium	1.00	0.99	99	1.00	1.01	101	2.0	80-120	<15	
Zinc	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Nitrate	0.50	0.49	98	80-120						
Nitrite	0.20	0.19	96	80-120						
Total Dissolved Solids	100.00	94.00	94	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120						
Fluoride, Total	1.00	0.99	99	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22135	06/05/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: VARIOUS QC Prepared: 06/05/2002 QC Analyzed: 06/16/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	18.60	93	80-120						
Surfactants (MBAS)	0.20	0.19	97	80-120						
Aluminum	1.00	1.01	101	80-120						
Calcium	1.00	1.02	102	80-120						
Copper	1.00	0.98	98	80-120						
Iron	1.00	1.03	103	80-120						
Magnesium	1.00	1.01	101	80-120						
Manganese	1.00	0.97	97	80-120						
Potassium	1.00	0.96	96	80-120						
Sodium	1.00	0.94	94	80-120						
Zinc	1.00	0.98	98	80-120						

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Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22135	06/05/2002	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 06052002 QC Prepared: 06/05/2002 QC Analyzed: 06/05/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.50	100	0.50	0.49	98	2.0	80-120	<15	

QC Batch No: 06052002 QC Prepared: 06/05/2002 QC Analyzed: 06/05/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.3	0.3	<1	<15	0.50	0.50	99	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Attention: Bill O'Braitis

Number of Pages 12
Date Received 06/19/2002
Date Reported 07/02/2002

Job Number	Order Date	Client
22286	06/19/2002	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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CHAIN OF CUSTODY RECORD

COMPANY: Law
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Braitis
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-20346
SITE NAME AND ADDRESS: Strathern Landfill, Sun Valley, CA

AETL JOB No. 22286

Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	pH, EC	General minerals	HCO_3, CO_3, TDS	Cl, Fe, NO_3, SO_4	Boron	CoD	524.2	Cd, Cr, Ni, Pb			TEST INSTRUCTIONS & COMMENTS
4928C	AE118091	6-19-02	1050	water	Various 6	—	X	X	X	X	X	X	X	X			Analysis for dissolved metals
Trip Blank	AE118092	6-19-02		water	Various 2	—							X				

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	8	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Sto Aban	Printed Name:	Printed Name:
Date: 6-19-02 Time: 1155	Date: Time:	Date: Time:
RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: 3.
Signature:	Signature:	Signature: [signature]
Printed Name:	Printed Name:	Printed Name: DESALAZAR
Date: Time:	Date: Time:	Date: 6/19/02 Time: 1200

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

Ordered By

Law, Inc.
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Los Angeles, CA 90040-1554

Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Our Lab I.D.				**AE118091**	**AE118092**		
Client Sample I.D.			Method Blank	4928C	Trip Blank		
Date Sampled			06/19/2002	06/19/2002	06/19/2002		
Date Prepared			06/19/2002	06/19/2002	06/19/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			07/01/2002	07/01/2002	07/01/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	1.3	ND		
1,1-Dichloroethane	0.25	0.50	ND	ND	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Our Lab I.D.				**AE118091**	**AE118092**		
Client Sample I.D.			Method Blank	4928C	Trip Blank		
Date Sampled			06/19/2002	06/19/2002	06/19/2002		
Date Prepared			06/19/2002	06/19/2002	06/19/2002		
Preparation Method			5035	5035	5035		
Date Analyzed			07/01/2002	07/01/2002	07/01/2002		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	8.9	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.4J	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE118091	AE118092		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		109	100	116		
1,2-Dichlorobenzene	75-125		117	118	111		

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ANALYTICAL RESULTS

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Telephone: (323)889-5300
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Page 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Our Lab I.D.							N/A	AE118091	
Client Sample I.D.							Method Blank	4928C	
Date Sampled							06/19/2002	06/19/2002	
Matrix							Aqueous	Aqueous	
Analytes	**D.F.**	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Chemical Oxygen Demand	1	410.4	mg/L	5.0	10.0	06/19/2002	ND	13	
Cadmium	1	6010BSCAN	mg/L	0.01	0.05	06/27/2002	ND	ND	
Chromium	1	6010BSCAN	mg/L	0.01	0.05	06/27/2002	ND	ND	
Lead	1	6010BSCAN	mg/L	0.05	0.10	06/27/2002	ND	ND	
Nickel	1	6010BSCAN	mg/L	0.01	0.05	06/27/2002	ND	ND	
Boron	1	SM-4500B	mg/L	0.1	0.2	06/26/2002	ND	0.9	

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ANALYTICAL RESULTS

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Los Angeles, CA 90040-1554

Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Our Lab I.D.				AE118091			
Client Sample I.D.			Method Blank	4928C			
Date Sampled			06/19/2002	06/19/2002			
Date Prepared			06/27/2002	06/27/2002			
Preparation Method			Various	Various			
Date Analyzed			06/27/2002	06/27/2002			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	670			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	670			
Anions Total (meq/L)	0.01	0.01	ND	15.22			
Cations Total (meq/L)	0.01	0.01	ND	15.35			
Ion Balance (percent difference)	0.01	0.01	ND	0.42			
Nitrate	0.05	0.10	ND	19.5			
Nitrite	0.01	0.02	ND	ND			
Chloride (Cl), Total	0.5	1.0	ND	25			
Conductivity (umhos/cm @77F)	5	10	ND	1,580			
Fluoride, Total	0.1	0.2	ND	0.3			
Hardness (Ca,Mg) as CaCO3	1	2	ND	800			
pH (pH units)	0.01	0.01	ND	7.00			
Sulfate	5	10	ND	39			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	1,010			
Aluminum	0.05	0.10	ND	ND			
Calcium	0.25	0.50	ND	151			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	ND			
Magnesium	0.25	0.50	ND	39.8			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	8.41			
Sodium	0.25	0.50	ND	98.3			
Zinc	0.01	0.03	ND	0.22			

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch No: 06192002 QC Prepared: 06/19/2002 QC Analyzed: 06/19/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.00	98	50.00	50.00	100	2.0	80-120	<15	

QC Batch No: 06192002 QC Prepared: 06/19/2002 QC Analyzed: 06/19/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	93	93	<1	<15	50.00	51.00	102	80-120		

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch No: 07012002 QC Prepared: 07/01/2002 QC Analyzed: 07/01/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	25.25	101	25.00	24.50	98	3.0	75-125	<20	
Chlorobenzene	25.00	25.25	101	25.00	23.50	94	7.2	75-125	<20	
1,1-Dichloroethene	25.00	26.00	104	25.00	24.50	98	5.9	75-125	<20	
Toluene (Methyl benzene)	25.00	24.00	96	25.00	22.50	90	6.5	75-125	<20	
LCS										
Chloroform (Trichloromethane)	25.00	25.00	100	25.00	27.75	111	10.4	75-125	<20	
Ethylbenzene	25.00	24.75	99	25.00	23.50	94	5.2	75-125	<20	
1,1,1-Trichloroethane	25.00	25.75	103	25.00	28.50	114	10.1	75-125	<20	
Trichloroethene	25.00	23.75	95	25.00	23.50	94	1.1	75-125	<20	
o-Xylene	25.00	24.25	97	25.00	23.00	92	5.3	75-125	<20	
m,p-Xylenes	50.00	51.00	102	50.00	46.50	93	9.2	75-125	<20	

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	1.05	105	1.00	1.00	100	4.9	80-120	<15	
Chromium	1.00	1.02	102	1.00	0.98	98	4.0	80-120	<15	
Lead	1.00	1.02	102	1.00	1.01	101	<1	80-120	<15	
Nickel	1.00	1.04	104	1.00	1.00	100	3.9	80-120	<15	

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	0.96	96	80-120						
Chromium	1.00	0.95	95	80-120						
Lead	1.00	0.95	95	80-120						
Nickel	1.00	0.95	95	80-120						

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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Nitrate	0.50	0.49	98	0.50	0.48	96	2.1	80-120	<15	
Nitrite	0.20	0.19	96	0.20	0.19	96	<1	80-120	<15	
Chloride (Cl), Total	20.00	20.00	100	20.00	21.00	105	4.9	80-120	<15	
Fluoride, Total	1.00	0.97	97	1.00	0.98	98	1.0	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Sulfate	20.00	18.20	91	20.00	19.60	98	7.4	80-120	<15	
Surfactants (MBAS)	0.20	0.20	99	0.20	0.19	97	2.0	80-120	<15	
Aluminum	1.00	1.06	106	1.00	1.05	105	<1	80-120	<15	
Calcium	1.00	1.02	102	1.00	1.04	104	1.9	80-120	<15	
Copper	1.00	1.03	103	1.00	0.99	99	4.0	80-120	<15	
Iron	1.00	1.09	109	1.00	1.08	108	<1	80-120	<15	
Magnesium	1.00	1.01	101	1.00	1.02	102	<1	80-120	<15	
Manganese	1.00	1.04	104	1.00	0.95	95	9.0	80-120	<15	
Potassium	0.01	0.01	103	0.01	0.01	101	2.0	80-120	<15	
Sodium	1.00	1.10	110	1.00	1.02	102	7.5	80-120	<15	
Zinc	1.00	1.04	104	1.00	0.98	98	5.9	80-120	<15	

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Nitrate	0.50	0.48	96	80-120						
Nitrite	0.20	0.19	94	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	141.30	100	80-120						
Fluoride, Total	1.00	0.99	99	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
22286	06/19/2002	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch No: 06272002 QC Prepared: 06/27/2002 QC Analyzed: 06/27/2002

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	19.20	96	80-120						
Surfactants (MBAS)	0.20	0.19	97	80-120						
Total Dissolved Solids	100.00	95.00	95	80-120						
Aluminum	1.00	1.04	104	80-120						
Calcium	1.00	1.01	101	80-120						
Copper	1.00	0.95	95	80-120						
Iron	1.00	1.12	112	80-120						
Magnesium	1.00	1.02	102	80-120						
Manganese	1.00	1.00	100	80-120						
Potassium	0.01	0.01	101	80-120						
Sodium	1.00	1.09	109	80-120						
Zinc	1.00	0.96	96	80-120						

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ANALYTICAL RESULTS

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Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
22286	06/19/2002	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch No: 06262002 QC Prepared: 06/26/2002 QC Analyzed: 06/26/2002

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.46	91	0.50	0.47	94	3.2	80-120	<15	

QC Batch No: 06262002 QC Prepared: 06/26/2002 QC Analyzed: 06/26/2002

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.9	0.8	11.8	<15	0.50	0.53	106	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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LAWGIBB GROUP

FIRST QUARTER 2001
GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

April 27, 2001

Law/Crandall Project 70111-2-0346

003288

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LAW Crandall
LAWGIBB Group Member

April 27, 2001

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **First Quarter 2001**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the first quarter 2001 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area during the first quarter 2001 have increased since the third quarter 2000. However, due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B was measured dry during the first and third quarter 2000 monitoring events. Recent groundwater measurements during the first quarter 2001, show that monitoring well 4928B continues to be dry. Therefore on March 23, 2001, we requested and received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C during the first quarter 2001 to provide upgradient groundwater quality data for the site. The analytical results of monitoring show that groundwater from 4928C have similar characteristics as well 4928B. We will continue to closely monitor water levels at well 4928B and at the site. We will resume monitoring 4928B as soon as water levels rise and well 4928B is no longer dry.

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for all inorganic constituents tested except total dissolved solids (TDS) and iron in up-gradient well 4928C. Waste disposal activities do not appear to be adversely affecting local groundwater quality.

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SCOPE AND LIMITATIONS

Law/Crandall (LAW) measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the first quarter 2001 groundwater monitoring results. Law/Crandall collected groundwater samples on March 29, 2001, and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples from these wells. Figure 2 shows the monitoring well locations. During this monitoring period, up-gradient well 4928B was dry. Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B was measured dry during the first and third quarter 2000 monitoring events and well 4928C was temporarily substituted as the up-gradient well for monitoring. Water levels and groundwater samples were collected at 4928A and 4928C on March 29, 2001. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

RESULTS

This section presents the first quarter 2001 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels on March 29, 2001. The water level at 4928A and 4928C increased approximately 3 feet since October 2000. Groundwater levels remained near the site's historic low groundwater surface levels. The spreading of approximately 14,373 acre-feet of water by the Los Angeles County Department of Public Works at Hansen, Branford, and Tujunga spreading

grounds from October 2000 through March 2001 may have contributed to the minor increase of groundwater levels.

The groundwater database in Appendix A contains the historic water level data. Groundwater contours for the first quarter in 2001 are drawn on the Groundwater Contour Map included as Appendix B. Figure 3 contains the historic hydrographs for the two on-site monitoring wells for this quarter.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the southeast during March, we used K in both the north-south, east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.001786 ft/ft in March. Groundwater flow for March was 1.07 ft/day or 391 ft/year to the south-southeast.

GROUNDWATER QUALITY

We collected a groundwater sample from 4928A and 4928C on March 29, 2001 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were performed for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains laboratory results for the current sampling event. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for all inorganic constituents tested except total dissolved solids (TDS) and iron in

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up-gradient well 4928C. Figure 4 is a Schoeller plot that compares the most recent inorganic water quality data in 4928B to the first quarter results form well 4928C. The Schoeller plot shows that groundwater quality in both these wells appear to be similar in character. Table 2 shows selected first quarter 2001 results compared to California Drinking Water Standards. Appendix C contains the full laboratory report listing all constituents tested.

Organics

Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, cis-1,2-dichloroethene, and dichlorodifluoromethane. Up-gradient well 4928C contained trace amounts of 1,1-DCA, PCE, and 1,2-DCA. The concentrations of these parameters were below California Drinking Water Standards except for 1,2-DCA in well 4928C. The organic compound levels in samples from well 4928C except for the detection of 1,2-DCA appear to be similar to or lower than recent levels in well 4928B. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

Table 2: Site Water Quality vs. California Drinking Water Standards, First Quarter 2001

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) March 2001	4928C (upgradient) March 2001
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	437	561
Chloride (Cl)	250	21	33
Sulfate (SO_4)	250	57	54
Nitrate (NO_3)	45	8	24
Iron (Fe)	0.3	0.06	2.44
Manganese (Mn)	0.05	<0.005	0.03
Zinc (Zn)	5	0.16	0.39
Organic (µg/L)			
Trichloroethene (TCE)	5	0.8	< 0.25
Tetrachloroethene (PCE)	5	4.5	2.9
1,1-dichloroethane (1,1-DCA)	5	3.0	0.8
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.5	< 0.25
dichlorodifluoromethane		3.6	1.5
1,2 - dichloroethane (1,2-DCA)	0.5	< 0.25	0.8

** Source: CCR, Title 22, Division 4, Chapter 15*

CONCLUSIONS AND RECOMMENDATIONS

Water levels in the first quarter of 2001 increased slightly from levels measured in the third quarter of 2000. Moderate precipitation and recharge operations at the Hansen, Branford, and Tujunga spreading grounds may have contributed to the increase in groundwater levels. There does not appear to be an association between landfill operations and changes in groundwater character. The potential for contamination is low due to the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible. Historically, low levels of volatile organic compounds have been present in both up-gradient and down-gradient monitoring wells.

Well 4928A showed levels of organic and inorganic constituents similar to previous quarters. Based on the Schoeller plot (Figure 4), the analytical results of monitoring show that groundwater from 4928C has similar characteristics to well 4928B. Concentrations of organic and inorganic constituents in 4928C appear to be similar to results from previous monitoring of 4928B except for the detection of 1,2-DCA in upgradient well 4928C. We will continue to closely monitor water levels at well 4928B and at the site. We will resume monitoring 4928B as soon as water levels rise and well 4928B is no longer dry. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban, Jr.
Staff Engineer

William J. O'Braitis, CEG 2037
Principal Geologist

\70111\92_PROJ\20346\2001\0346Q1-01.DOC/ETA:swb
(3 copies submitted)

003293

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

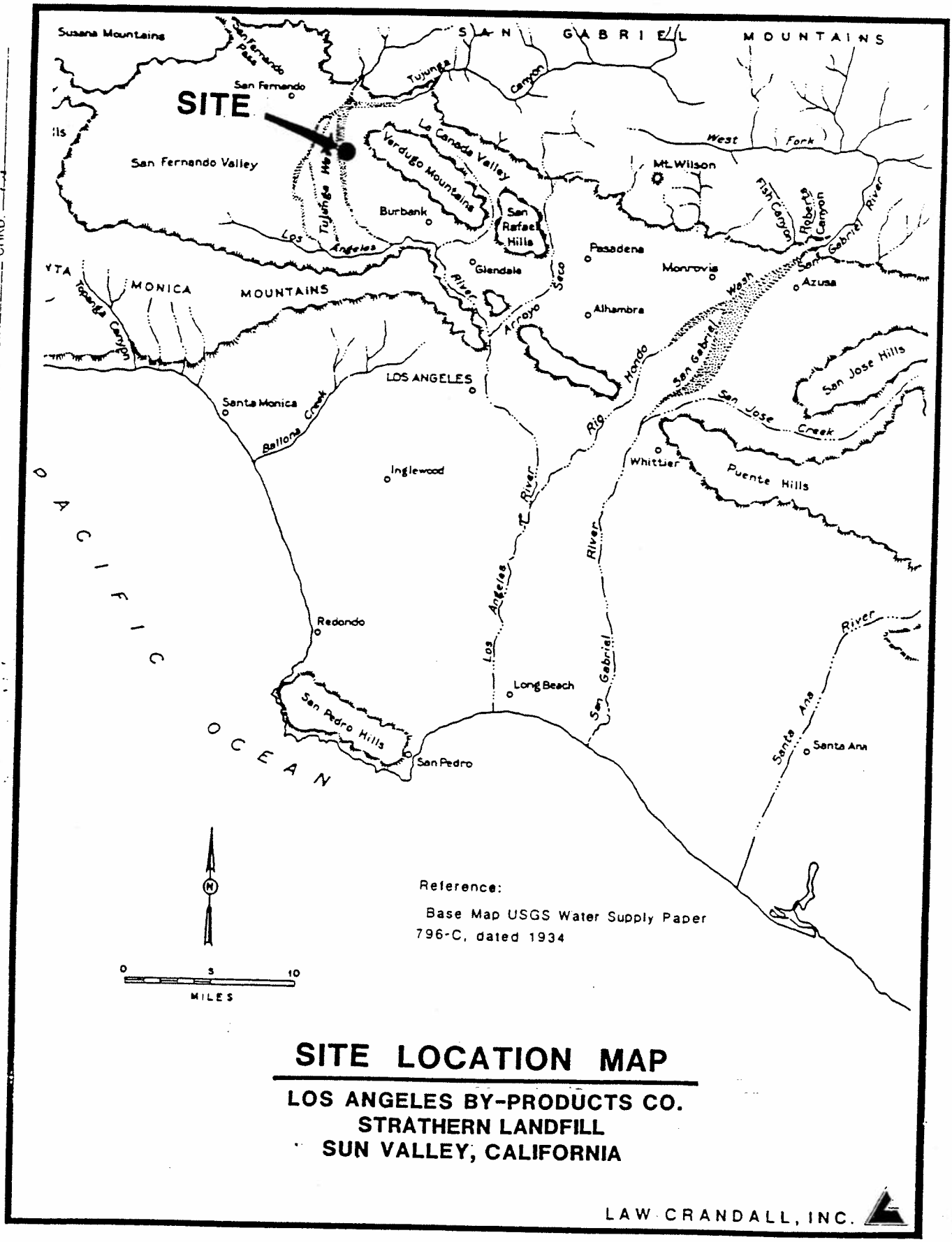
Executed the 27th day of April, 2001, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

CONFIDENTIAL



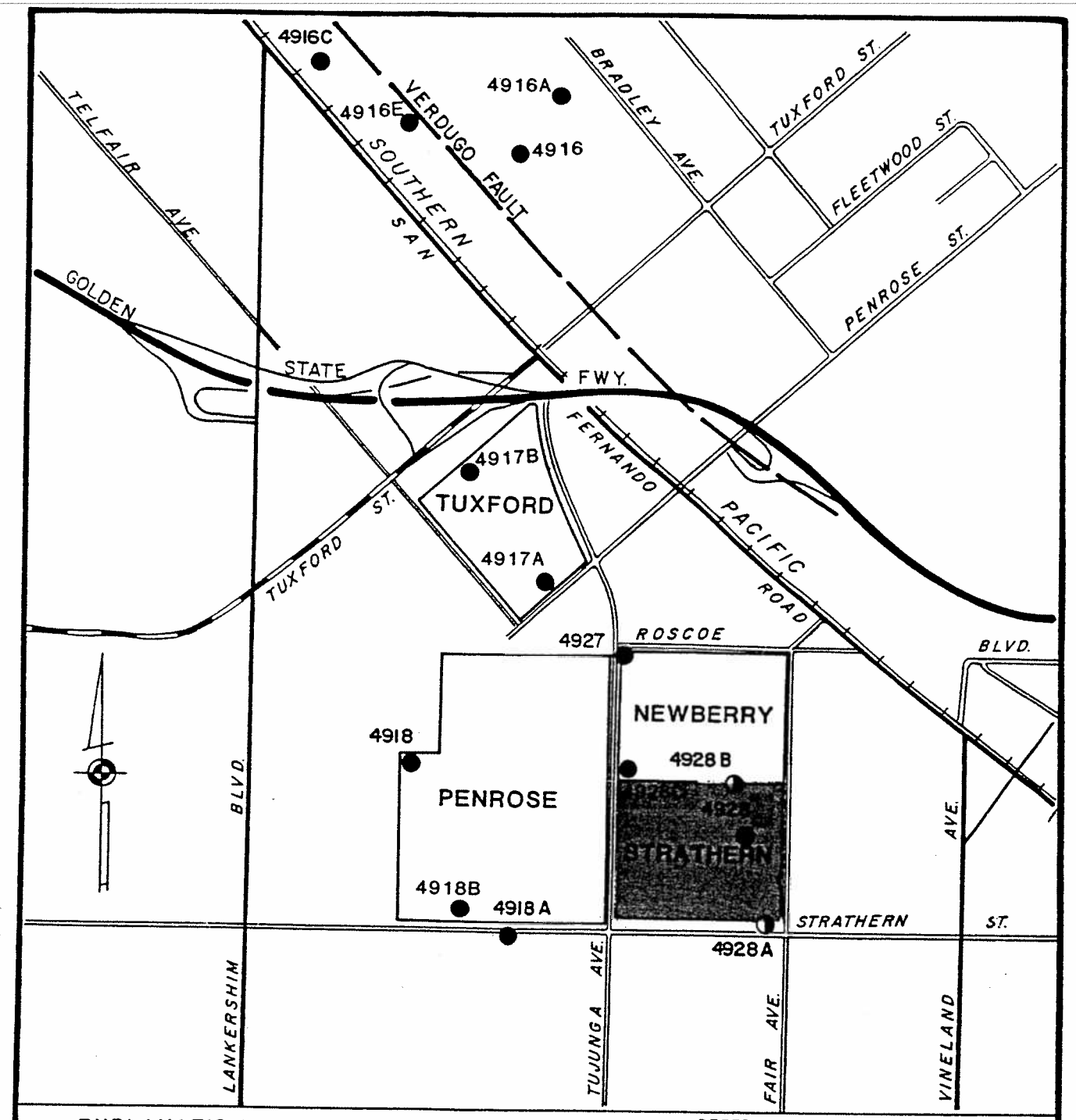
SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003293



EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:

BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000

SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2

003299

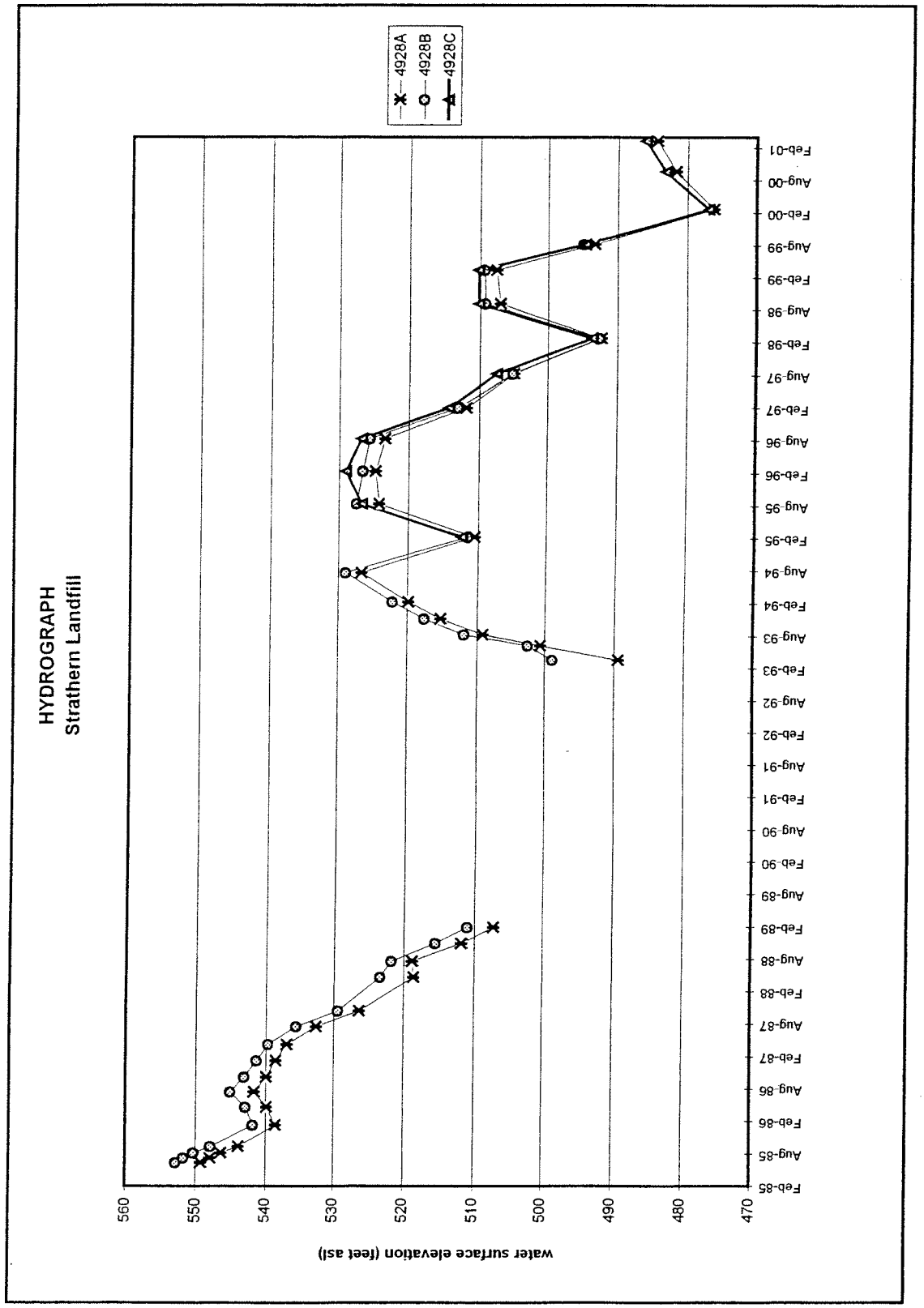


Figure 3

LAW/CRANDALL

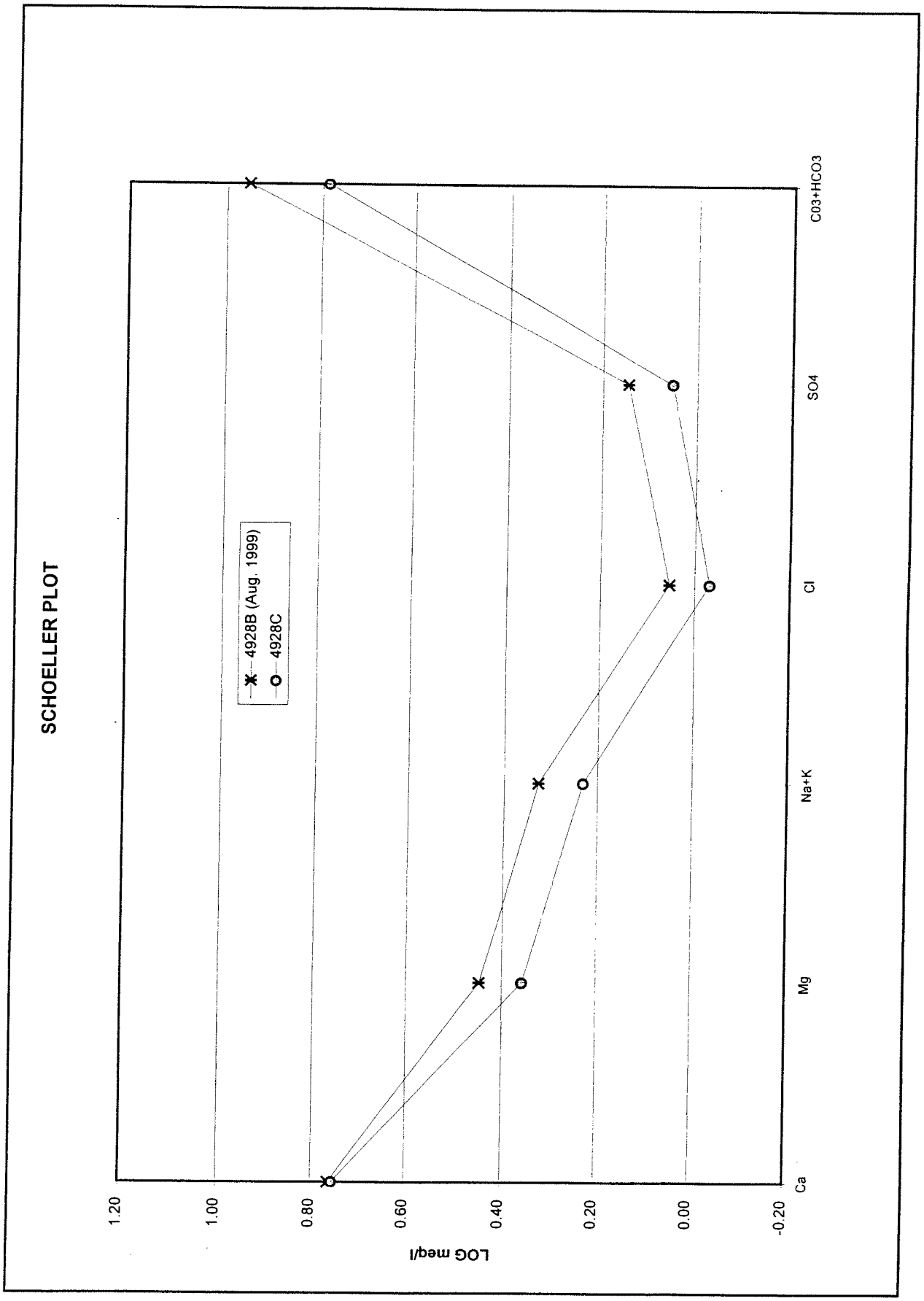

SCHOELLER PLOT
4928B (Aug. 1999)
4928C
LOG meq/l
1.20
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
Ca
Mg
Na+K
Cl
SO4
C03+HCO3

Figure 4

APPENDIX A

GROUNDWATER DATABASE

JOB _____ DATE _____ F.I. _____ DH. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		WATER LEV (ft.)			FIELD MEAS. (ppm)				LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0.0	383	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.70	73	18	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	820	59	98	8.9			730	0.08	7.5	
4928A	14-Aug-85		548.41	6.8	74	1250	22.5		1400	7.80	230	33	79	11.0	0.0	810	44	110	<0.44	0.8	0.25	790	<0.05	120	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	8.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	89	1200	68.0	460	1300	7.10	170	36	80	8.0	0.0	390	37	260	8.8			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	87	1200	28.0	470	1400	7.40	180	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	8.9	88	340	75.0	460	1400	7.00	180	38	82	7.8	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.88	5.8	69	1100	42.5	490	1500	8.80	170	44	85	6.8	<0.8	850	62	130	18.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.81	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.8	590	58	83	19.0	0.83	0.30	780	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	8.4	<0.6	480	81	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.20	91	28	49	5.6	<0.8	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	284	590	7.60	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<8		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<8		
4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.8	290	47	19	7.7		0.64	350	<8		
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.00	66	700	55	358	820	7.00	91	23	39	5.4	<1	330	48	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49						830	6.90	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330	87	35	42	0.29	0.19	560	<8		
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<8		
4928A	23-Aug-96		523.41																						
4928A	11-Sep-96		NM																						
4928A	31-Oct-96		518.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<8		
4928A	14-Feb-97		511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.30	68	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.17	66	785	25		816	7.04	96.8	24.8	31.2	5.0	<2	358	64	29	22.1	0.4	0.40	528	<8		
4928A	30-Mar-99		507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324	68	33	38	0.3	0.50	585	<6		
4928A	25-Aug-99		493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332	64	32	20	0.3	0.40	546	<8		
4928A	10-Mar-00		476.16	7.25	64	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2	0.40	509	22		
4928A	09-Oct-00		481.63	6.76	67	800	30	372	790	8.81	93.9	24.2	32.8	5.5	<1	288	55	30	35.0	0.2	0.40	501	<5		
4928A	29-Mar-01		484.40	7.44	65	733	28	378	733	7.34	87.1	22.1	32.1	5.3	<1	290	57	21	8.0	<0.1	<0.1	437	<5		

NM = Not measured

LAW/CRANDALL

003303

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JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	0.5	6	0.5	1.0	0.05	0.05	0.005	0.05	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.088	<0.09		0.290				0.870	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.800	B&C
4928A	14-Aug-85											<0.08	<0.048		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.280				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.083		0.390				0.850	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-88	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.580	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.480	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.058	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96																			
4928A	11-Sep-96																			
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.6	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.5	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.2	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.0	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL
4928A	10-Mar-00	1.1	8.3	<0.25	<0.25	<0.25	0.3			<0.005	<0.01	0.08	0.08		<0.005	<0.05	<0.01		0.20	AETL
4928A	09-Oct-00	0.9	3.8	<0.25	<0.25	<0.25	0.08[J]			<0.005	0.02	<0.01	<0.03		<0.005	<0 05	<0.01		0.19	AETL
4928A	29-Mar-01	0.8	4.5	<0.25	<0.25	<0.25	<0.05			<0.01	<0.01	<0.01	0.06		<0.005	<0.05	<0.01		0.16	AETL

NM = Not measured

LAW/CRANDALL

003304

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JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		WATER LEV (ft.)			FIELD MEAS. (ppm)				LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	8.3	0.0	450	53	38	39.0			580	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	8.90	130	23	49	3.3	0.0	380	61	33	38.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340	28	25	28.0			480	<0.05	<3	
4928B	29-Apr-86		542.86	8.7	71	520	16.0	255	600	8.00	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	8.0	
4928B	15-Oct-86		543.10	6.0	88	890	33.5	255	680	7.60	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	8.7	68	500	18.5	240	700	7.30	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.83	8.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	8.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350	50	24	8.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	68	465	65.0	291	740	7.90	90	22	35	5.0	<0.8	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.8	88	455	25.0	280	710	7.80	82	31	31	4.2	<0.6	358	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	8.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.8	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.8	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.8	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82.0	240	7	198	410	8.10	28	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<8		
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	28	39	6.2	<0.8	370	48	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79		68.0	600	50	288	680	6.50	82	22	32	5.0	<0.6	370	48	17	3.4		0.38	390	<8		
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370	120	20	2.7		0.38	400	<8		
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	800			
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	8.9		
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	38	42	5.9	<10	550	45	28	30	<0.2	0.15	810	<6		
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.81																						
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	780			
4928B	14-Feb-97		512.95	7.8	69.0	930	79	540	910	7.00	110	31	38	5.6	0	500	51	29	8.8	<0.2	0.45	560	15		
4928B	28-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	8.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438	57	39	8.2	0.3	0.3	618	<8		
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<8.0		
4928B	25-Aug-99	461.09	494.85	7.1	78.0	1240		628	1180	8.88	118	34	48	4.8	<2.0	548	67	40	6.8	0.3	0.3	754	<8.0		
4928B	10-Mar-00		DRY																						
4928B	09-Oct-00		DRY																						
4928B	29-Mar-01		DRY																						

NM = Not measured

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003305

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JOB _____ DATE _____ F.I. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.087	B&C
4928B	18-Jan-86	<1	<1	<1								<0.033	<0.083		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-88	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-88	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.084	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96																			
4928B	11-Sep-98	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.84	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.28	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.6	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.96	AETL
4928B	30-Mar-99	0.8	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL
4928B	10-Mar-00																			
4928B	09-Oct-00																			
4928B	29-Mar-01																			

NM = Not measured

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003309

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JOB _____ DATE _____ F.I. _____ Dft. _____ O.E. _____ Chkd _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928C	20-Feb-95	823.37	512.30																						
4928C	24-Aug-95		526.72																						
4928C	23-Feb-96		528.98																						
4928C	23-Aug-96		526.79																						
4928C	14-Feb-97		514.27																						
4928C	26-Aug-97		507.48																						
4928C	12-Mar-98		493.57																						
4928C	21-Sep-98		510.16																						
4928C	30-Mar-99		510.22																						
4928C	25-Aug-99		494.57																						
4928C	10-Mar-00		476.92																						
4928C	09-Oct-00		463.18																						
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372	54	33	24	<0.1	0.2	561	<5.0		

NM = Not measured

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003307

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JOB _____ DATE _____ F.I. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
4928C	20-Feb-95																			
4928C	24-Aug-95																			
4928C	23-Feb-96																			
4928C	23-Aug-96																			
4928C	14-Feb-97																			
4928C	26-Aug-97																			
4928C	12-Mar-98																			
4928C	21-Sep-98																			
4928C	30-Mar-99																			
4928C	25-Aug-99																			
4928C	10-Mar-00																			
4928C	09-Oct-00																			
4928C	29-Mar-01	<0.25	2.9	0.8	<0.25	<0.25	0.07 J			<0.005	<0.01	<0.01	2.44		0.03	<0.05	<0.01		0.39	AETL

NM = Not measured

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APPENDIX B

GROUNDWATER CONTOUR MAP

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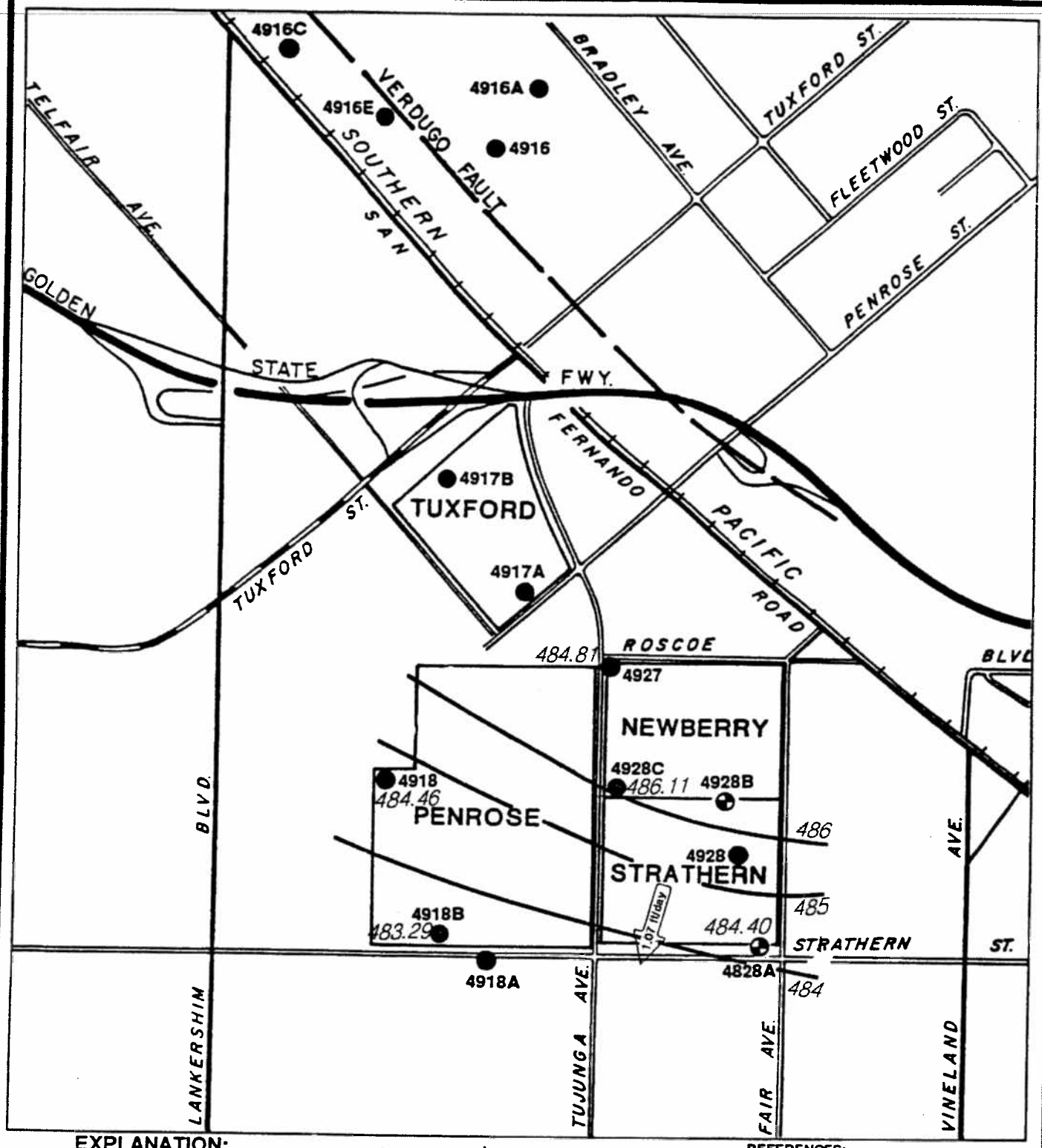

EXPLANATION:

4928 — MONITORING WELL LOCATION AND NUMBER

4828B — OTHER NEARBY MONITORING WELL

484.46 — GROUND WATER SURFACE ELEVATION IN FEET ASL.

484 — LINES OF EQUAL GROUND WATER ELEVATION

N

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL

JOB 7011-2-0346.0001.0001 DATE 04/27/01 F.T. DR. Todd MN O.E. S. Abary CHKD

FIGURE 1

003310

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be triple rinsed from current well water before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Up-gradient wells shall be sampled first, and then the down-gradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

003312

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s) shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. The chain-of-custody record and other pertinent forms shall accompany all packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • AETLAB@AOL.COM

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 03/29/2001
Date Reported 04/19/2001

Job Number	Order Date	Client
18364	03/29/2001	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Gary Maillé Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003315

American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall
PHONE: 323-~~8~~89-5300
PROJECT MANAGER: Bill O'Brait73
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 70111-L-0341
SITE NAME AND ADDRESS: Strathern Landfill, Sun Valley, CA

AETL JOB No. 18364

Page 1 of 1

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	4928 A	AF93443	3-29-01	1120	water	various	—
2	4928 C	AF93444	↓	1355	↓	various	↓
3	Trip Blank	AF93445	↓		↓		↓
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

ANALYSIS REQUESTED

	General M. Metals	Boron	COD	524.2	Cd, Cr, Ni, Pb										
1	X	X	X	X	X										
2	X	X	X	X	X										
3				X											

TEST INSTRUCTIONS & COMMENTS

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS		PROPERLY COOLED Y / N / NA	
CUSTODY SEALS Y / N / NA		SAMPLES INTACT Y / N / NA	
RECEIVED IN GOOD COND. Y / N		SAMPLES ACCEPTED Y / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Abar	Signature:	Signature:
Printed Name: Sto Abar	Printed Name:	Printed Name:
Date: 3-29-01 Time: 1425	Date: Time:	Date: Time:
RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: 3.
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: Time:	Date: Time:	Date: 3/29/01 Time: 14:25

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

00339

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2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • AETLAB@AOL.COM

ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Our Lab I.D.							AE93443	AE93444
Client Sample I.D.						Method Blank	4928A	4928C
Date Sampled						03/29/2001	03/29/2001	03/29/2001
Matrix						Aqueous	Aqueous	Aqueous
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	**Results**
Chemical Oxygen Demand	410.4	mg/L	5.0	10.0	04/17/2001	ND	ND	ND
Cadmium	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Chromium	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Lead	6010BSCAN	mg/L	0.05	0.10	04/11/2001	ND	ND	ND
Nickel	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Boron	SM-4500B	mg/L	0.1	0.2	04/17/2001	ND	ND	ND

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03292001 / 03292001

Our Lab I.D.				**AE93443**	**AE93444**		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			03/29/2001	03/29/2001	03/29/2001		
Date Prepared			03/29/2001	03/29/2001	03/29/2001		
Preparation Method			VARIOUS	VARIOUS	VARIOUS		
Date Analyzed			03/29/2001	04/18/2001	04/18/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Nitrate	0.05	0.10	ND	8.0	24.0		
Nitrite	0.01	0.02	ND	ND	ND		
Bicarbonate (as CaCO3)	1	2	ND	290	372		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	290	372		
Anions Total (meq/L)	0.01	0.01	NA	7.73	9.90		
Cations Total (meq/L)	0.01	0.01	NA	7.74	9.72		
Ion Balance (percent difference)	0.01	0.01	NA	+0.06	0.92		
Chloride (Cl), Total	0.5	1.0	ND	21	33		
Conductivity (umhos/cm @77F)	5	10	ND	708	897		
Fluoride, Total	0.1	0.2	ND	0.4	0.2		
Hardness (Ca,Mg) as CaCO3	1	2	ND	322	416		
pH (pH units)	0.01	0.01	NA	7.34	7.31		
Sulfate	5	10	ND	57	54		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	437	561		
Aluminum	0.05	0.10	ND	ND	0.07J		
Calcium	0.25	0.50	ND	87.1	114		
Copper	0.01	0.02	ND	ND	ND		
Iron	0.03	0.05	ND	0.06	2.44		
Magnesium	0.25	0.50	ND	22.1	27.7		
Manganese	0.005	0.010	ND	ND	0.03		
Potassium	0.5	1.0	ND	5.3	5.9		
Sodium	0.25	0.50	ND	32.1	35.7		
Zinc	0.01	0.03	ND	0.16	0.39		

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Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 04092001 / 04092001

Our Lab I.D.				AE93443	AE93444	AE93445	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			03/29/2001	03/29/2001	03/29/2001	03/29/2001	
Date Prepared			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Benzene	0.25	0.50	ND	ND	ND	ND	
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND	ND	
Bromochloromethane	0.25	0.50	ND	ND	ND	ND	
Bromodichloromethane	0.25	0.50	ND	ND	ND	ND	
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND	ND	
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND	ND	
n-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
sec-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
tert-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
Carbon tetrachloride	0.25	0.50	ND	ND	ND	ND	
Chlorobenzene	0.25	0.50	ND	ND	ND	ND	
Chloroethane	0.25	0.50	ND	ND	ND	ND	
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND	ND	
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND	ND	
2-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
4-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND	ND	
Dibromochloromethane	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND	ND	
Dibromomethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
Dichlorodifluoromethane	0.25	0.50	ND	3.6	1.5	ND	
1,1-Dichloroethane	0.25	0.50	ND	3.0	0.8	ND	
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	0.8	ND	

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ANALYTICAL RESULTS

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 04092001 / 04092001

Our Lab I.D.				AE93443	AE93444	AE93445	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			03/29/2001	03/29/2001	03/29/2001	03/29/2001	
Date Prepared			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,1-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
cis-1,2-Dichloroethene	0.25	0.50	ND	0.5	ND	ND	
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
1,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,3-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
2,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,1-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
Ethylbenzene	0.25	0.50	ND	ND	ND	ND	
Hexachlorobutadiene	0.25	0.50	ND	ND	ND	ND	
Isopropylbenzene	0.25	0.50	ND	ND	ND	ND	
p-Isopropyltoluene	0.25	0.50	ND	ND	ND	ND	
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND	ND	
Naphthalene	0.5	1.0	ND	ND	ND	ND	
n-Propylbenzene	0.25	0.50	ND	ND	ND	ND	
Styrene	0.25	0.50	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
Tetrachloroethene	0.25	0.50	ND	4.5	2.9	ND	
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
Trichloroethene	0.25	0.50	ND	0.8	ND	ND	
Trichlorofluoromethane	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND	ND	
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND	ND	
o-xylene	0.25	0.50	ND	ND	ND	ND	
m,p-Xylenes	0.5	1.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE93443	AE93444	AE93445	
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.	% Rec.	
Bromofluorobenzene	75-125		93	82	80	86	
1,2-Dichlorobenzene	75-125		99	80	87	82	

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 04172001 / 04172001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	46.50	93	50.00	46.00	92	1.0	80-120	<15	

QC Batch Number: 04172001 / 04172001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	100.00	95.00	95	80-120		

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 04092001 / 04092001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.00	44.50	89	50.00	44.50	89	<1	75-125	<20	
Chlorobenzene	50.00	51.00	102	50.00	50.00	100	2.0	75-125	<20	
1,1-Dichloroethene	50.00	43.00	86	50.00	45.00	90	4.5	75-125	<20	
Toluene (Methyl benzene)	50.00	47.00	94	50.00	46.00	92	2.2	75-125	<20	
LCS										
Chloroform (Trichloromethane)	50.00	48.50	97	50.00	48.00	96	1.0	75-125	<20	
Ethylbenzene	50.00	53.00	106	50.00	50.50	101	4.8	75-125	<20	
1,1,1-Trichloroethane	50.00	53.00	106	50.00	50.50	101	4.8	75-125	<20	
Trichloroethene	50.00	49.00	98	50.00	47.50	95	3.1	75-125	<20	
o-Xylene	50.00	51.50	103	50.00	48.50	97	6.0	75-125	<20	
m,p-Xylenes	100.00	104.00	104	100.00	100.00	100	3.9	75-125	<20	

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 04112001 / 04112001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	0.93	93	1.00	0.92	92	1.0	80-120	<15	
Chromium	1.00	0.95	95	1.00	0.95	95	<1	80-120	<15	
Lead	1.00	0.97	97	1.00	0.98	98	1.0	80-120	<15	
Nickel	1.00	0.93	93	1.00	0.91	91	2.1	80-120	<15	

QC Batch Number: 04112001 / 04112001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	1.00	100	80-120						
Chromium	1.00	1.00	100	80-120						
Lead	1.00	1.03	103	80-120						
Nickel	1.00	1.01	101	80-120						

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 03292001 / 03292001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Nitrate	0.50	0.52	104	0.50	0.52	103	<1	80-120	<15	
Nitrite	0.20	0.19	97	0.20	0.19	97	<1	80-120	<15	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Carbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Hydroxide (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Chloride (Cl), Total	20.00	19.40	97	20.00	19.40	97	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	2.00	1.88	94	2.00	1.86	93	1.0	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Sulfate	20.00	18.40	92	20.00	18.40	92	<1	80-120	<15	
Surfactants (MBAS)	0.20	0.19	94	0.20	0.19	94	<1	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.00	1.01	101	1.00	1.01	101	<1	80-120	<15	
Calcium	20.00	21.00	105	20.00	20.40	102	2.9	80-120	<15	
Copper	1.00	0.96	96	1.00	0.95	95	1.0	80-120	<15	
Iron	1.00	1.03	103	1.00	1.02	102	<1	80-120	<15	
Magnesium	20.00	21.40	107	20.00	20.80	104	2.8	80-120	<15	
Manganese	1.00	0.92	92	1.00	0.91	91	1.0	80-120	<15	
Potassium	10.00	9.80	98	10.00	9.60	96	2.0	80-120	<15	
Sodium	20.00	21.20	106	20.00	20.40	102	3.8	80-120	<15	
Zinc	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	

QC Batch Number: 03292001 / 03292001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Nitrate	0.50	0.52	104	80-120						
Nitrite	0.20	0.19	97	80-120						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						

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ANALYTICAL RESULTS

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03292001 / 03292001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Carbonate (as CaCO3)	20.00	20.00	100	80-120						
Hydroxide (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	138.47	98	80-120						
Fluoride, Total	2.00	1.88	94	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	18.80	94	80-120						
Surfactants (MBAS)	0.20	0.19	95	80-120						
Total Dissolved Solids	100.00	92.00	92	80-120						
Aluminum	1.00	1.08	108	80-120						
Calcium	20.00	21.40	107	80-120						
Copper	1.00	0.99	99	80-120						
Iron	1.00	1.08	108	80-120						
Magnesium	20.00	20.80	104	80-120						
Manganese	1.00	0.98	98	80-120						
Potassium	10.00	10.00	100	80-120						
Sodium	20.00	21.00	105	80-120						
Zinc	1.00	1.01	101	80-120						

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ANALYTICAL RESULTS

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Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 04172001 / 04172001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.47	93	0.50	0.46	92	1.0	80-120	<15	

QC Batch Number: 04172001 / 04172001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	ND	ND	<1	<15	0.50	0.47	94	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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2001 ANNUAL GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

Law/Crandall Project 70111-2-0346

February 12, 2002

003329

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LAW Crandall

February 12, 2002

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **2001 Annual Groundwater Monitoring Report**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 2001 groundwater monitoring activities at the Los Angeles By-Products Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells rose about three feet between the third quarter 2000 and first quarter 2001. Between the first and third quarters 2001, groundwater levels rose approximately one foot due to precipitation received during the latter winter and spring months. However, due to the decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B was measured dry during the first and third quarter 2001 monitoring events. Therefore on March 23, 2001, we requested and received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry.

The analytical results of monitoring show that groundwater from 4928C have similar characteristics as well 4928B. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS) and iron. Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) in wells 4928A and 4928C during September 2001. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

A Division of LAW Engineering and Environmental Services, Inc.
200 Citadel Drive • Los Angeles, California 90040-1554
323-889-5300 • Fax: 323-721-6700

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 2001 groundwater-monitoring program. Law/Crandall collected groundwater samples in March and September of 2001 and prepared this

report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

RESULTS

This section presents the 2001 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March and September 2001. Groundwater levels rose about 3 feet between the third quarter 2000 and first quarter 2001. Between March and September 2001, groundwater levels increased one foot in the monitoring wells. During the first and third quarter 2001 well 4928B was dry. During 2001, groundwater levels remained near the site's historic low groundwater surface levels. This is probably related to the past few dry summer seasons and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 9,388 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading grounds from March 2001 through August 2001. This may have contributed to the minor increase in groundwater levels. Figure 3 contains the hydrographs for the three wells. The

groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for March and September 2001. Appendix B contains these contour maps.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A and 4928C for the first quarter on March 29, 2001 and for the third quarter on September 25, 2001. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from AETL of groundwater samples collected in 2001. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 2001, the groundwater met California Drinking Water Standards for most constituents. Total dissolved solids (TDS) levels exceeded the secondary drinking water standard of 500 mg/l at well 4928A in September 2001, and at well 4928C in March and September 2001. Iron exceeded the secondary drinking water standard of 0.3 mg/l at well 4928C in March and September 2001. Table 2 shows selected 2001 results compared to California Drinking Water Standards. Appendix E contains water quality history graphs and statistical distribution graphs of selected groundwater constituents.

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Table 2: Site Water Quality vs. California Drinking Water Standards
2001 Cumulative Data

Constituent	Units	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
			4928A (downgradient)		4928C(upgradient)	
			March	September	March	September
Field Measurements						
pH (pH units)	pH units	6—9	7.44	8.10	6.68	7.50
Conductivity	µmhos/cm	900*	733	511	954	1,550
Carbon Dioxide	ppm	—	28	32	45	65
Alkalinity	ppm	—	376	156	472	920
Inorganic						
Total Dissolved Solids (TDS)	ppm	500*	437	501	561	925
Chloride (Cl)	ppm	250*	21	35	33	112
Sulfate (SO_4)	ppm	250*	57	62.4	54	44.6
Nitrate (NO_3)	ppm	45	8	31.4	24	24.8
Boron (B)	ppm	1**	<0.1	0.4	<0.1	0.4
Chemical Oxygen Demand (COD)	ppm	—	<5.0	<5.0	<5.0	<5.0
Bicarbonate (HCO3)	ppm	—	290	288	372	612
Carbonate (CO3)	ppm	—	<1	<1	<1	<1
Nickel (Ni)	ppm	0.1	<0.1	<0.1	<0.1	<0.1
Iron (Fe)	ppm	0.3	0.06	0.23	2.44	0.4
Cadmium (Cd)	ppb	5	<10	<10	<10	<10
Chromium (Cr)	ppb	50	<10	10[J]	<10	20[J]
Lead (Pb)	ppb	15**	<50	<50	<50	<50
Organic						
Trichloroethylene (TCE)	ppb	5	0.8	0.9	< 0.25	0.4[J]
Tetrachloroethylene (PCE)	ppb	5	4.5	6.9	2.9	5.4
Benzene	ppb	1	<0.25	<0.25	<0.25	<0.25
Vinyl Chloride (VC)	ppb	0.5	<0.25	<0.25	<0.25	<0.25

Prepared/Date: ETA/1-24/02
Checked/Date: KVF/1-25-02

1 – Source: CCR, Title 22, Division 4, Chapter 15

** – Secondary MCL – Established for certain chemicals, characteristics or constituents which affect taste, odor or appearance of drinking water*

*** – Action level – Health-based advisory levels established by the Department of Health Services (DHS), which primary MCLs have not been adopted*

J – Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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Organics

During 2001, trace amounts of trichloroethene (TCE) and tetrachloroethene (PCE) were detected in downgradient and upgradient wells. Levels of organic constituents were below California Drinking Water Standards, except for PCE in both wells during the third quarter and 1,2-dichloroethane (1,2-DCA) in well 4928C during the first quarter. No definite pattern has emerged from the volatile organic sampling data. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have rose three feet between October 2000 and March 2001 due to low precipitation during the fall and early winter months. Between the first and third quarters 2001, groundwater levels rose approximately one foot due to precipitation received during the latter winter and spring months. Due to an overall decrease in regional groundwater levels over the past year, upgradient well 4928B was dry during the first and third quarter monitoring events. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS). There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

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We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5356.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban, Jr.
Staff Engineer

William J. O'Braitis, C.E.G. 2037
Principal Geologist

G:\PROJECTS\70111 ENVIRONMENTAL\92_PROJ\20346\DELIVERABLES\2001\0346AR01.DOC/EA:
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

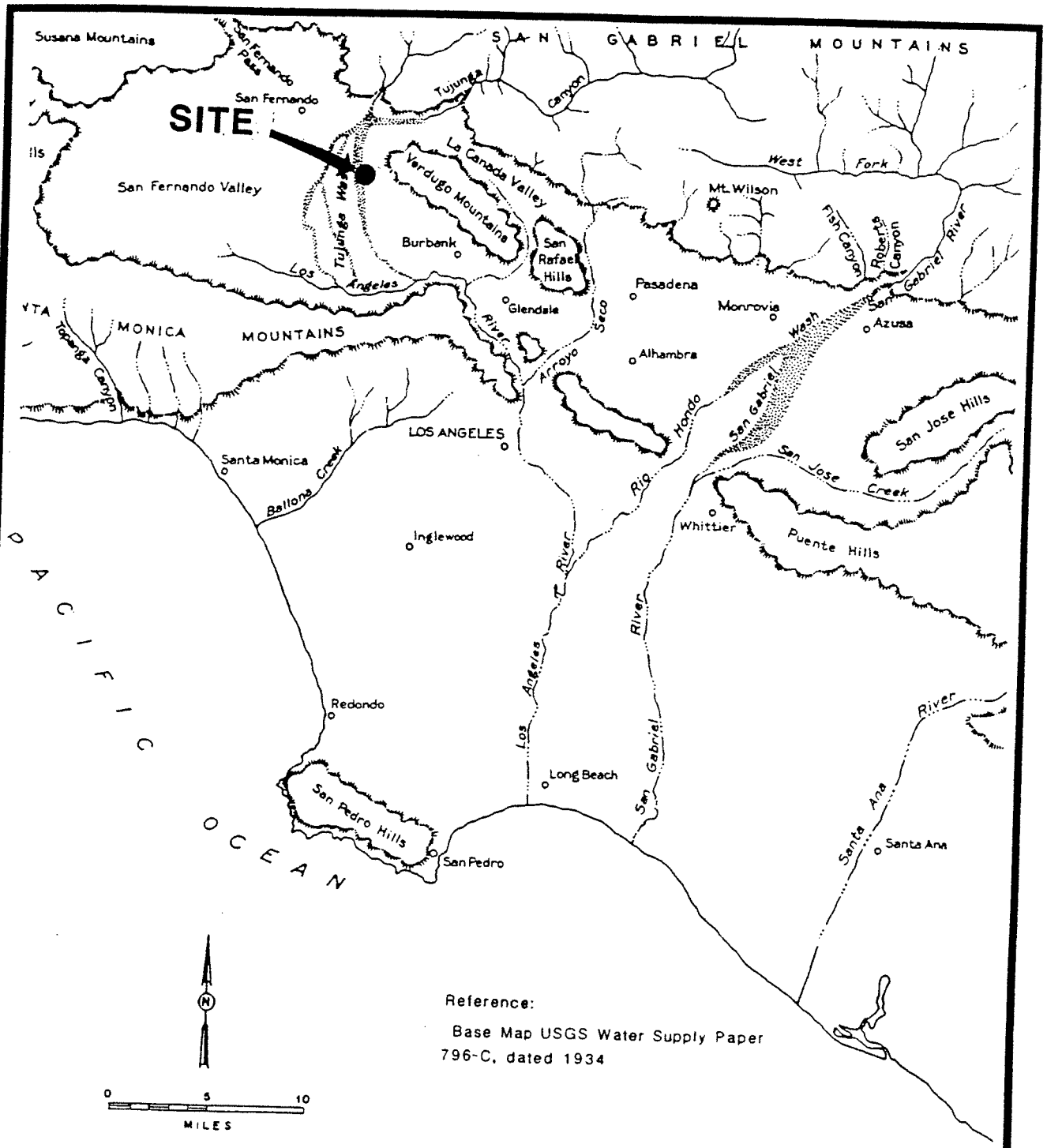
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the _____ day of _____, 2002, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

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FORM 120 JOB DATE DR. O.E. CHKD.

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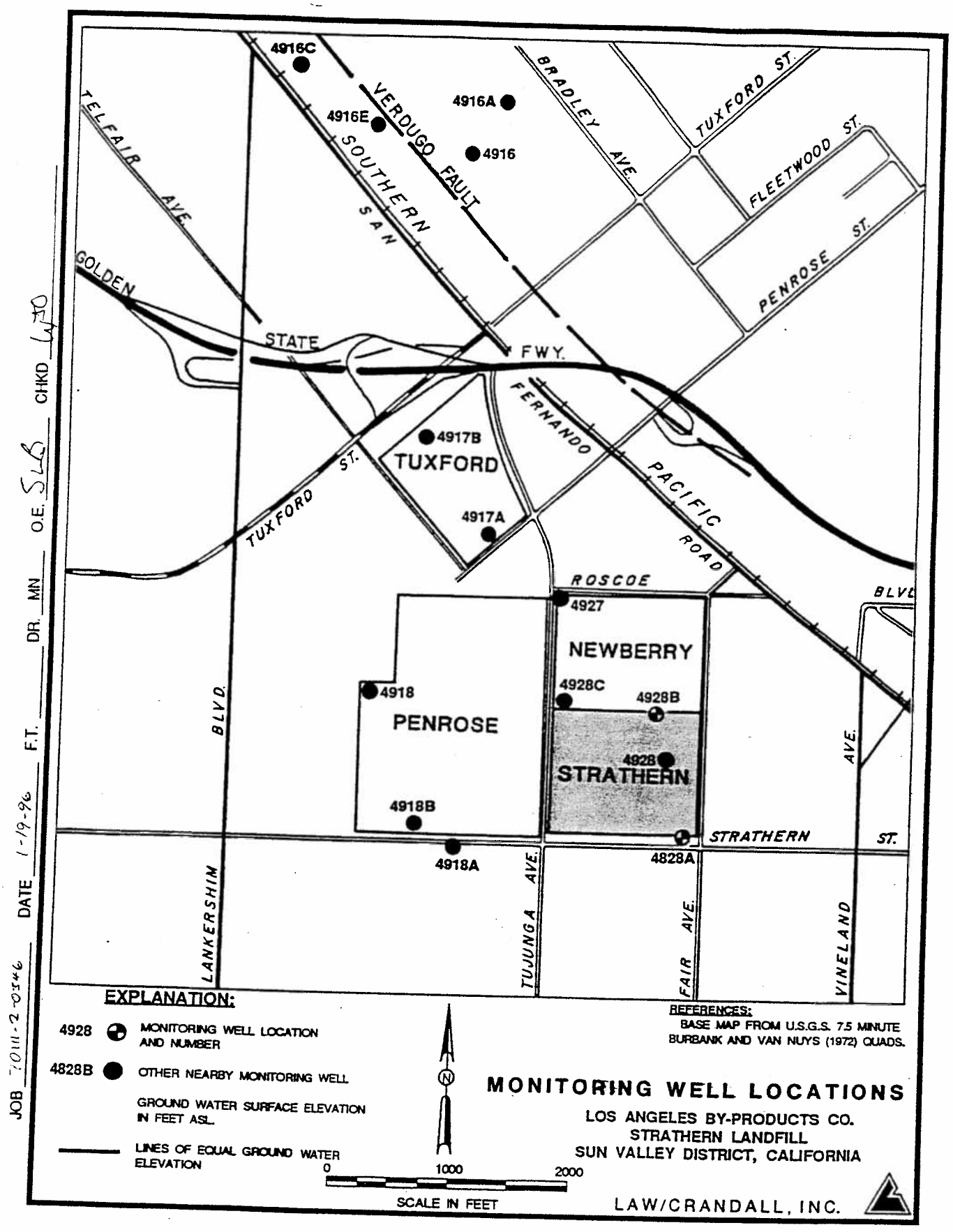

FIGURE 2

JOB 7011-2-034c DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

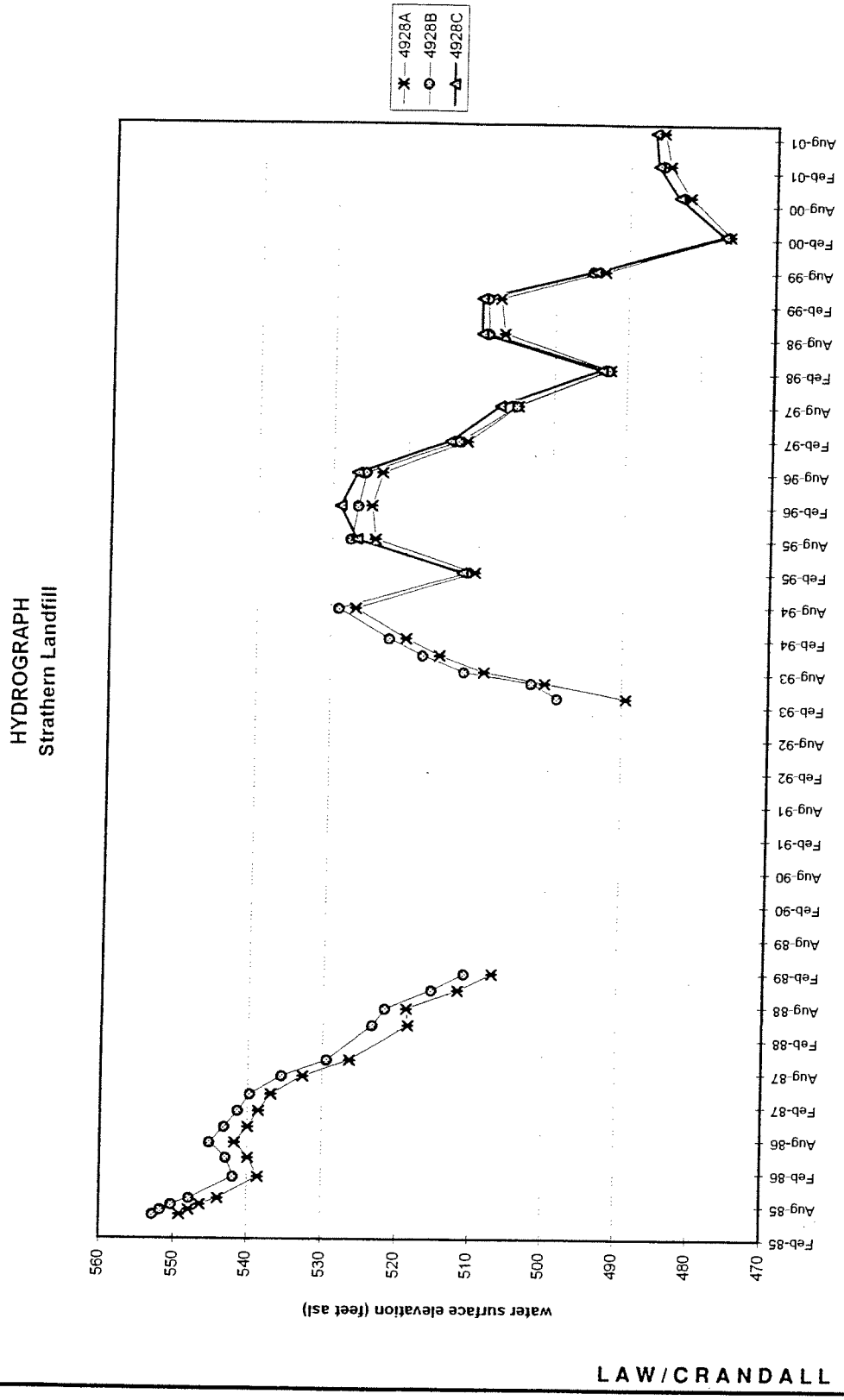

FIGURE 3

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APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	ppm	ppm	ppm	ppm	ppm	ppm
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0.0	363
4928A	31-Dec-84								560	7.70	73	18	26	4.2	0.0	280
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.90	120	34	93	8.6	0.0	620
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.80	250	35	78	8.0	0.0	670
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.00	160	40	91	8.6	0.0	620
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.10	170	36	80	8.0	0.0	390
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.40	160	41	84	3.8	0.0	490
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.8	0.0	590
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.80	170	44	85	8.6	<0.6	650
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.30	110	63	63	6.4	<0.8	480
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.20	91	26	49	5.6	<0.6	370
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.60	72	17	29	4.6	<0.6	320
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.50	72	18	29	4.5	<0.6	290
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.10	73	18	30	4.6	<0.6	290
4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7.40	69	17	29	4.5	<0.6	290
4928A	21-Feb-94		519.78	7.20	66	650	50	348	830	7.10	100	24	45	5.9	<0.6	430
4928A	05-Aug-94		526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330
4928A	20-Feb-95		510.49						830	6.90	97	25	36	5.3	<0.6	390
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	6.90	100	25	43	5.4	<10	330
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380
4928A	23-Aug-98		523.41													
4928A	11-Sep-96		NM													
4928A	31-Oct-96		516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360
4928A	14-Feb-97		511.81	7.20	65	830	50	420	850	6.90	100	27	37	5.6	0	390
4928A	26-Aug-97		504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400
4928A	12-Mar-98		492.23	7.30	68	881	36	320	890	7.25	101	26.5	34.3	6.4	<2.0	320
4928A	21-Sep-98		507.01	7.17	66	785	25		816	7.04	96.6	24.6	31.2	5.0	<2	358
4928A	30-Mar-99		507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324
4928A	25-Aug-99		493.23	7.46	67	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332
4928A	10-Mar-00		476.16	7.25	64	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296
4928A	09-Oct-00		481.63	6.76	67	800	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286
4928A	29-Mar-01		484.40	7.44	65	733	28	376	733	7.34	87.1	22.1	32.1	5.3	<1	290
4928A	25-Sep-01		485.40	8.10	68	511	32	156	817	7.31	89.6	23.2	31.2	5.3	<1	288

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JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	ppm	ppm	ppm	ppm	ppm	ppm
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.60	87	10	29	4.2	0.0	280
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.30	85	24	36	4.6	<0.6	350
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370
4928B	21-Feb-94		522.09	7.3	69.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550
4928B	23-Feb-96		526.60	7.2	75.0	820	35	546	1400	6.80	190	54	52	6.5	<10	690
4928B	23-Aug-96		525.61													
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502
4928B	21-Sep-98		509.2	7.3	69.6	835			1020	7.09	72	22	101	7.2	<2.0	438
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600
4928B	25-Aug-99		494.85	7.1	78.0	1240		628	1180	6.86	116	34	46	4.8	<2.0	548
4928B	10-Mar-00		DRY													
4928B	09-Oct-00		DRY													
4928B	29-Mar-01		DRY													

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JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	WATER LEVEL		FIELD MEASUREMENTS					GENERAL MINERALS							
		REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3
	UNITS	FT. ASL		pH	°C	µmhos/cm	ppm	ppm	µmhos/cm	pH	ppm	ppm	ppm	ppm	ppm	ppm
	MCLs			6 - 9	<100	900	--	--	900	6 - 9	--	--	--	--	--	--
4928C	20-Feb-95	823.37	-311.07													
4928C	24-Aug-95		-296.65													
4928C	23-Feb-96		-294.39													
4928C	23-Aug-96		-296.58													
4928C	14-Feb-97		-309.10													
4928C	26-Aug-97		-315.89													
4928C	12-Mar-98		-329.80													
4928C	21-Sep-98		-313.21													
4928C	30-Mar-99		510.22													
4928C	25-Aug-99		-328.80													
4928C	10-Mar-00		-346.45													
4928C	09-Oct-00		483.18													
4928C	29-Mar-01	823.37	486.11	6.68	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372
4928C	25-Sep-01		486.62	7.50	70.7	1550	65	920	1560	7.32	190	46.6	43.6	7.1	<1	612

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JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	GENERAL MINERALS (cont.)							ORGANICS				METALS					LAB SOURCE
	UNITS	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	
	MCLs	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppm	
		250	250	45	0.5	--	500	--	5	5	1	0.5	0.005	0.05	0.3	0.05	0.1	
4928A	03-May-84	75	65	15.0			650			1			0.001		0.700	0.010	0.050	B&C
4928A	31-Dec-84	58	7	12.0			351		44	5.3					0.220			B&C
4928A	19-Jun-85	46	87	16.0			750	<0.05	<1	1					<0.09			B&C
4928A	17-Jul-85	59	98	8.9			730	0.06	<1	1					0.060			B&C
4928A	14-Aug-85	44	110	<0.44	0.8		790	<0.05							<0.046			B&C
4928A	19-Sep-85	55	81	25.0			830	<0.05	37	2					<0.042			B&C
4928A	16-Jan-86	26	150	5.4			880	<0.05	<1	1					<0.063			B&C
4928A	29-Apr-86	27	75	<4			580		<1	<1					<0.2			B&C
4928A	22-Jul-86	37	260	8.6			780	0.11	<1	2					<0.2			B&C
4928A	15-Oct-86	55	130	12.0	0.6		810	<0.05	<1	3			<0.01		<0.1	<0.02		B&C
4928A	14-Jan-87	54	120	12.0	0.8		820	<0.05	<1	<1			<0.01		<0.03	<0.02	<0.06	B&C
4928A	15-Apr-87	62	130	16.4	0.8		910	<0.05	<1	<1			<0.01		<0.02	<0.01	<0.04	B&C
4928A	24-Jul-87	58	140	13.0			840	<0.05	<1	2			<0.02		<0.02	<0.02	<0.04	B&C
4928A	21-Oct-87	56	83	19.0	0.63		760	<0.05	<1	2			<0.02		0.12	<0.01	<0.04	B&C
4928A	29-Apr-88	61	50	23.0	0.3		800	11.0	<1	<1			<0.02		0.32	0.004	<0.004	B&C
4928A	28-Jul-88	51	36	19.0	0.34		550	10.0	<1	1			<0.001		<0.02	<0.002	<0.04	B&C
4928A	08-Nov-88	56	23	12.0	0.22		450	<3	<1	<1			<0.001		<0.02	<0.002	<0.04	B&C
4928A	07-Feb-89	51	21	16.0	0.05		440	<5	<1	2			<0.001		0.920	0.007	<0.04	B&C
4928A	02-Apr-93	35	18	8			330	<6	<0.5	1.6			<0.001		0.2	0.005	<0.04	B&C
4928A	22-Jun-93	48	18	8.3			370	7.7	<1	1.4			<0.001		0.12	0.003	<0.04	B&C
4928A	24-Aug-93	48	17	8.2			340	<6	<1	1.3			<0.001		0.17	0.004	<0.04	B&C
4928A	19-Nov-93	47	19	7.7			350	<6	<0.5	0.9			<0.001		0.13	0.003	<0.04	B&C
4928A	21-Feb-94	52	34	1.4	0.3		530		<0.5	<0.5			<0.001		0.76	0.004	<0.04	B&C
4928A	05-Aug-94	46	46	21	0.26		490		<0.5	1.6			<0.003		0.42	0.005	<0.005	B&C
4928A	20-Feb-95	67	34	34	<0.05		530	21	<0.5	1.9			<0.005	<0.01	7.8	0.099	<0.04	B&C
4928A	24-Aug-95	67	35	42	0.29		560	<6	<0.2	2.5			<0.005	<0.01	0.35	0.010	0.073	B&C
4928A	23-Feb-96	75	53	57	0.32		660	<6	0.54	5.2			<0.001	<0.01	2.80	0.027	<0.04	B&C
4928A	23-Aug-96																	
4928A	11-Sep-96																	
4928A	31-Oct-96	73	45	55	0.26		630	<6	0.56	6.3			<0.01	<0.01	0.15	<0.05	<0.04	BCA
4928A	14-Feb-97	59	30	37	0.21		500	9.4	1.0	9.4			<0.005	<0.01	<0.04	<0.05	<0.04	VOC
4928A	26-Aug-97	69	38	50	0.25		590	<6	0.69	7.8			<0.005	<0.01	0.13	<0.05	<0.04	VOC
4928A	12-Mar-98	84	50	7.4	0.6		593	<10	0.6	7.0			<0.005	<0.01	0.15	<0.05	<0.04	AETL
4928A	21-Sep-98	64	29	22.1	0.4		528	<6	1.5	15.1			<0.005	<0.01	0.95	<0.05	<0.04	AETL
4928A	30-Mar-99	68	33	38	0.3		565	<6	1.2	7.2			<0.005	<0.01	0.18	<0.05	<0.04	AETL
4928A	25-Aug-99	64	32	20	0.3		546	<6	1.0	12.1			<0.005	<0.01	<0.05	<0.05	<0.04	AETL
4928A	10-Mar-00	62	36	11.7	0.2		509	22	1.1	6.3			<0.005	<0.01	0.08	<0.05	<0.01	AETL
4928A	09-Oct-00	55	30	35.0	0.2		501	<5	0.9	3.8			<0.005	0.02	<0.03	<0.05	<0.01	AETL
4928A	29-Mar-01	57	21	8.0	<0.1	322	437	<5	0.8	4.5	<0.25	<0.25	<0.01	<0.01	0.06	<0.05	<0.01	AETL
4928A	25-Sep-01	62.4	35	31.4	0.4	356	501	<5	0.9	6.9	<0.25	<0.25	<0.01	0.01J	0.23	<0.05	<0.01	AETL

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JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. GA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB
	UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppm	SOURCE
	MCLs	250	250	45	0.5	--	500	--	5	5	1	0.5	0.005	0.05	0.3	0.05	0.1	
4928B	23-Oct-84	60	40	19.0			620			4					<0.08			B&C
4928B	19-Jun-85	53	38	39.0			560	<0.05	<1	<1					<0.09			B&C
4928B	17-Jul-85	68	40	20.0			520	0.06	<1	<1					<0.06			B&C
4928B	14-Aug-85	56	37	12.0	0.4		530	<0.05							<0.046			B&C
4928B	19-Sep-85	61	33	36.0			510	<0.05	<1	3					<0.042			B&C
4928B	16-Jan-86	28	25	26.0			460	<0.05	<1	<1					<0.063			B&C
4928B	29-Apr-86	30	20	7.0			320		<1	1					<0.2			B&C
4928B	22-Jul-86	29	22	6.9			420	0.12	<1	3					<0.2			B&C
4928B	15-Oct-86	60	35	15.0	0.3		440	<0.05	<1	<1			<0.01		0.29	<0.02		B&C
4928B	14-Jan-87	51	18	5.3	0.5		420	0.10	<1	2			<0.01		<0.03	<0.02	<0.06	B&C
4928B	15-Apr-87	54	18	6.6	0.4		410	0.08	<1	2			<0.01		0.88	<0.01	<0.04	B&C
4928B	24-Jul-87	50	24	6.8			430	<0.05	<1	4			<0.02		<0.02	<0.02	<0.04	B&C
4928B	21-Oct-87	50	21	8.4	0.25		430	<0.05	<1	<1			<0.02		0.20	<0.01	<0.04	B&C
4928B	29-Apr-88	52	20	2.9	0.18		400	7.0	<1	3			<0.02		5.70	0.013	<0.004	B&C
4928B	28-Jul-88	48	18	2.4	0.19		410	6.0	<1	4			<0.001		<0.02	<0.002	<0.04	B&C
4928B	08-Nov-88	53	18	3.2	0.16		430	<3	<1	4			<0.001		0.040	<0.002	<0.04	B&C
4928B	07-Feb-89	56	17	3.9	<0.02		400	<5	1	5			<0.001		2.200	0.003	<0.04	B&C
4928B	02-Apr-93	24	19	<0.2			190	<6	0.90	<0.5			0.005		0.82	0.049	<0.04	B&C
4928B	22-Jun-93	46	22	0.78			410	7.2	<1	1.7			0.001		14	0.024	<0.04	B&C
4928B	24-Aug-93	46	17	3.4			390	<6	<1	2.0			<0.001		17	0.018	<0.04	B&C
4928B	19-Nov-93	120	20	2.7			400	<6	<0.5	1.4			<0.001		82	0.003	<0.04	B&C
4928B	21-Feb-94	46	22	<0.2	0.25		440		<0.5	<0.5			<0.001		87	0.013	<0.04	B&C
4928B	05-Aug-94	48	35	0.31	0.27		600		1.1	2.7			<0.003		7.9	0.017	<0.005	B&C
4928B	20-Feb-95	32	38	<0.1	<0.05		580	6.9	2.7	<0.5			<0.005	<0.01	2.4	0.016	<0.04	B&C
4928B	24-Aug-95	45	26	30	<0.2		610	<6	1.3	4.8			<0.005	<0.01	18	0.014	<0.04	B&C
4928B	23-Feb-96	78	77	5.7	0.53		880	32.0	1.3	2.6			<0.001	<0.01	24	0.0076	<0.04	B&C
4928B	23-Aug-96																	
4928B	11-Sep-96	50	44	27	0.31		760		1.4	5.6			<0.01	<0.01	<0.4	<0.05	<0.04	BCA
4928B	14-Feb-97	51	29	8.6	<0.2		560	15	1.1	4.2			<0.005	<0.01	0.063	<0.05	<0.04	VOC
4928B	26-Aug-97	48	38	8	0.21		660	34	0.78	2.5			<0.005	<0.01	0.27	<0.05	<0.04	VOC
4928B	12-Mar-98	40	56	<0.1	0.5		802	<10	0.5	1.9			<0.005	<0.01	51.5	0.14	<0.04	AETL
4928B	21-Sep-98	57	39	6.2	0.3		618	<6	<0.5	1.6			<0.005	<0.01	44.5	<0.05	<0.04	AETL
4928B	30-Mar-99	53	55	1.3	0.3		789	<6.0	0.6	1.8			<0.005	<0.01	34.4	<0.05	<0.04	AETL
4928B	25-Aug-99	67	40	6.6	0.3		754	<6.0	<0.5	1.9			<0.005	<0.01	0.33	<0.05	<0.04	AETL
4928B	10-Mar-00																	
4928B	09-Oct-00																	
4928B	29-Mar-01																	

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JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		GENERAL MINERALS (cont.)							ORGANICS				METALS					
POINT	DATE	SO4	Cl	NO3	B	HARD	TDS	COD	TCE	PCE	BENZENE	VC	Cd	Cr	Fe	Pb	Ni	LAB SOURCE
	UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppm	
	MCLs	250	250	45	0.5	- -	500	- -	5	5	1	0.5	0.005	0.05	0.3	0.05	0.1	
4928C	20-Feb-95																	
4928C	24-Aug-95																	
4928C	23-Feb-96																	
4928C	23-Aug-96																	
4928C	14-Feb-97																	
4928C	26-Aug-97																	
4928C	12-Mar-98																	
4928C	21-Sep-98																	
4928C	30-Mar-99																	
4928C	25-Aug-99																	
4928C	10-Mar-00																	
4928C	09-Oct-00																	
4928C	29-Mar-01	54	33	24	<0.1	416	561	<5.0	<0.25	2.9	<0.25	<0.25	<0.005	<0.01	2.44	<0.05	<0.01	AETL
4928C	25-Sep-01	44.6	112	24.8	0.4	720	925	<5.0	0.4J	5.4	<0.25	<0.25	<0.01	0.02J	0.4	<0.05	<0.01	AETL

J = Analyte detected above the method detection limit (MDL) but below the practical quantitation limit (PQL)

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APPENDIX B

GROUNDWATER CONTOUR MAPS

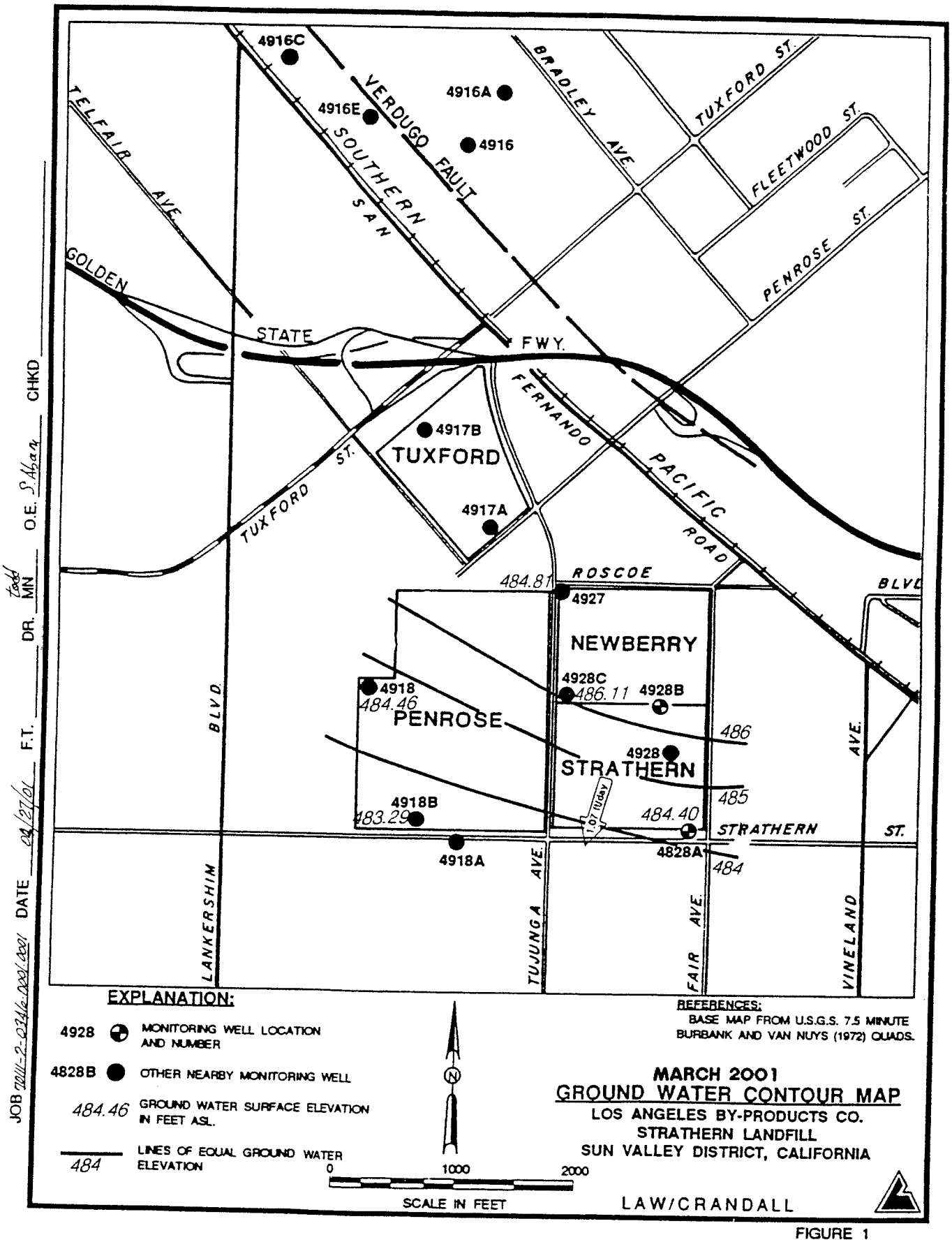
4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE
GOLDEN
STATE
FWY.
FERNANDO
4917B
TUXFORD
ST.
TUXFORD
4917A
PACIFIC
ROAD
484.81
ROSCOE
BLVD
4927
NEWBERRY
4928C
486.11
4928B
4918
484.46
PENROSE
BLVD.
486
4928
STRATHERN
AVE.
485
4918B
483.29
484.40
STRATHERN
ST.
4828A
484
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 2011-2-0246.000/2001 DATE 4/27/01 F.T. DR. Todd MN O.E. S Abay CHKD
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
484.46 GROUND WATER SURFACE ELEVATION IN FEET ASL.
484 LINES OF EQUAL GROUND WATER ELEVATION
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MARCH 2001
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL

FIGURE 1

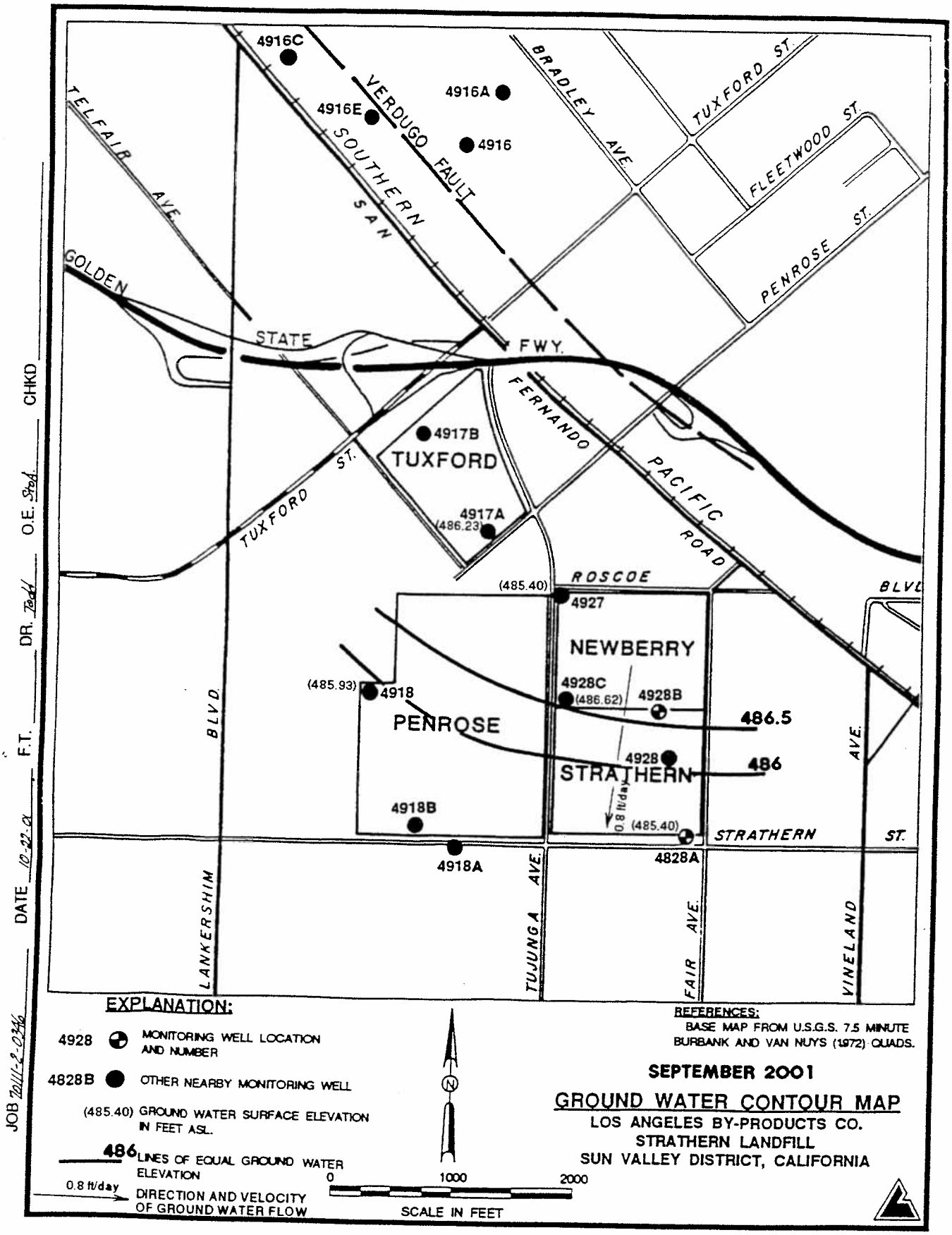
4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN
SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
FERNANDO
PACIFIC
ROAD
4917B
TUXFORD
4917A
(486.23)
TUXFORD ST.
ROSCOE
BLVD.
(485.40)
4927
NEWBERRY
(485.93)
4918
4928C
(486.62)
4928B
PENROSE
486.5
4928
STRATHERN
486
AVE.
4918B
0.8 ft/day
(485.40)
STRATHERN ST.
4828A
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
(485.40) GROUND WATER SURFACE ELEVATION IN FEET ASL.
486 LINES OF EQUAL GROUND WATER ELEVATION
0.8 ft/day DIRECTION AND VELOCITY OF GROUND WATER FLOW
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
SEPTEMBER 2001
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
JOB 2011-2-0346
DATE 10-22-01
DR. Todd
CHKD
O.E. Prof.
F.T.

FIGURE 2

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

The laboratory that will perform sample analyses shall prepare sample containers in advance. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • AETLAB@AOL.COM

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 03/29/2001
Date Reported 04/19/2001

Job Number	Order Date	Client
18364	03/29/2001	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill
Sun Valley, CA

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Gary Maiki

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall
PHONE: 323-~~8~~89-5300
PROJECT MANAGER: Bill O'Brait[illegible]
FAX: 323-721-6706
PROJECT NAME: Strathern
PROJECT #: 70111-2-0341
SITE NAME AND ADDRESS: Strathern Landfill, Sun Valley, CA

AETL JOB No. 18364
Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
4928A	~~AP~~93443	3-29-01	1120	water	various	—
4928C	~~AP~~93444	↓	1355	↓	various	↓
Trip Blank	~~AP~~93445	↓		↓		↓

ANALYSIS REQUESTED

General Mineral	Boron	COD	524.2	Cd, Cr, Ni, Pb
X	X	X	X	X
X	X	X	X	X
			X	

TEST INSTRUCTIONS & COMMENTS

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS		PROPERLY COOLED Y / N / NA	
CUSTODY SEALS Y / N / NA		SAMPLES INTACT Y / N / NA	
RECEIVED IN GOOD COND. Y / N		SAMPLES ACCEPTED Y / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature]	Signature:	Signature:
Printed Name: Sto Aban	Printed Name:	Printed Name:
Date: 3-29-01 Time: 1425	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: [signature]
Printed Name:	Printed Name:	Printed Name: [illegible]
Date: Time:	Date: Time:	Date: 3/29/01 Time: 14:25

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

1C0033

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ANALYTICAL RESULTS

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Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Our Lab I.D.							AE93443	AE93444
Client Sample I.D.						Method Blank	4928A	4928C
Date Sampled						03/29/2001	03/29/2001	03/29/2001
Matrix						Aqueous	Aqueous	Aqueous
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	**Results**
Chemical Oxygen Demand	410.4	mg/L	5.0	10.0	04/17/2001	ND	ND	ND
Cadmium	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Chromium	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Lead	6010BSCAN	mg/L	0.05	0.10	04/11/2001	ND	ND	ND
Nickel	6010BSCAN	mg/L	0.01	0.05	04/11/2001	ND	ND	ND
Boron	SM-4500B	mg/L	0.1	0.2	04/17/2001	ND	ND	ND

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Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03292001 / 03292001

Our Lab I.D.				AE93443	AE93444		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			03/29/2001	03/29/2001	03/29/2001		
Date Prepared			03/29/2001	03/29/2001	03/29/2001		
Preparation Method			VARIOUS	VARIOUS	VARIOUS		
Date Analyzed			03/29/2001	04/18/2001	04/18/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Nitrate	0.05	0.10	ND	8.0	24.0		
Nitrite	0.01	0.02	ND	ND	ND		
Bicarbonate (as CaCO3)	1	2	ND	290	372		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	290	372		
Anions Total (meq/L)	0.01	0.01	NA	7.73	9.90		
Cations Total (meq/L)	0.01	0.01	NA	7.74	9.72		
Ion Balance (percent difference)	0.01	0.01	NA	+0.06	0.92		
Chloride (Cl), Total	0.5	1.0	ND	21	33		
Conductivity (umhos/cm @77F)	5	10	ND	708	897		
Fluoride, Total	0.1	0.2	ND	0.4	0.2		
Hardness (Ca,Mg) as CaCO3	1	2	ND	322	416		
pH (pH units)	0.01	0.01	NA	7.34	7.31		
Sulfate	5	10	ND	57	54		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	437	561		
Aluminum	0.05	0.10	ND	ND	0.07J		
Calcium	0.25	0.50	ND	87.1	114		
Copper	0.01	0.02	ND	ND	ND		
Iron	0.03	0.05	ND	0.06	2.44		
Magnesium	0.25	0.50	ND	22.1	27.7		
Manganese	0.005	0.010	ND	ND	0.03		
Potassium	0.5	1.0	ND	5.3	5.9		
Sodium	0.25	0.50	ND	32.1	35.7		
Zinc	0.01	0.03	ND	0.16	0.39		

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ANALYTICAL RESULTS

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Sun Valley, CA

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Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 04092001 / 04092001

Our Lab I.D.				AE93443	AE93444	AE93445	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			03/29/2001	03/29/2001	03/29/2001	03/29/2001	
Date Prepared			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Benzene	0.25	0.50	ND	ND	ND	ND	
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND	ND	
Bromochloromethane	0.25	0.50	ND	ND	ND	ND	
Bromodichloromethane	0.25	0.50	ND	ND	ND	ND	
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND	ND	
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND	ND	
n-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
sec-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
tert-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
Carbon tetrachloride	0.25	0.50	ND	ND	ND	ND	
Chlorobenzene	0.25	0.50	ND	ND	ND	ND	
Chloroethane	0.25	0.50	ND	ND	ND	ND	
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND	ND	
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND	ND	
2-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
4-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND	ND	
Dibromochloromethane	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND	ND	
Dibromomethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
Dichlorodifluoromethane	0.25	0.50	ND	3.6	1.5	ND	
1,1-Dichloroethane	0.25	0.50	ND	3.0	0.8	ND	
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	0.8	ND	

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ANALYTICAL RESULTS

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 04092001 / 04092001

Our Lab I.D.				**AE93443**	**AE93444**	**AE93445**	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			03/29/2001	03/29/2001	03/29/2001	03/29/2001	
Date Prepared			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			04/09/2001	04/09/2001	04/09/2001	04/09/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,1-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
cis-1,2-Dichloroethene	0.25	0.50	ND	0.5	ND	ND	
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
1,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,3-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
2,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,1-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
Ethylbenzene	0.25	0.50	ND	ND	ND	ND	
Hexachlorobutadiene	0.25	0.50	ND	ND	ND	ND	
Isopropylbenzene	0.25	0.50	ND	ND	ND	ND	
p-Isopropyltoluene	0.25	0.50	ND	ND	ND	ND	
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND	ND	
Naphthalene	0.5	1.0	ND	ND	ND	ND	
n-Propylbenzene	0.25	0.50	ND	ND	ND	ND	
Styrene	0.25	0.50	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
Tetrachloroethene	0.25	0.50	ND	4.5	2.9	ND	
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
Trichloroethene	0.25	0.50	ND	0.8	ND	ND	
Trichlorofluoromethane	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND	ND	
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND	ND	
o-xylene	0.25	0.50	ND	ND	ND	ND	
m,p-Xylenes	0.5	1.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE93443	AE93444	AE93445	
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.	% Rec.	
Bromofluorobenzene	75-125		93	82	80	86	
1,2-Dichlorobenzene	75-125		99	80	87	82	

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Sun Valley, CA

Telephone: (323)889-5300
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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 04172001 / 04172001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	46.50	93	50.00	46.00	92	1.0	80-120	<15	

QC Batch Number: 04172001 / 04172001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	100.00	95.00	95	80-120		

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 04092001 / 04092001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.00	44.50	89	50.00	44.50	89	<1	75-125	<20	
Chlorobenzene	50.00	51.00	102	50.00	50.00	100	2.0	75-125	<20	
1,1-Dichloroethene	50.00	43.00	86	50.00	45.00	90	4.5	75-125	<20	
Toluene (Methyl benzene)	50.00	47.00	94	50.00	46.00	92	2.2	75-125	<20	
LCS										
Chloroform (Trichloromethane)	50.00	48.50	97	50.00	48.00	96	1.0	75-125	<20	
Ethylbenzene	50.00	53.00	106	50.00	50.50	101	4.8	75-125	<20	
1,1,1-Trichloroethane	50.00	53.00	106	50.00	50.50	101	4.8	75-125	<20	
Trichloroethene	50.00	49.00	98	50.00	47.50	95	3.1	75-125	<20	
o-Xylene	50.00	51.50	103	50.00	48.50	97	6.0	75-125	<20	
m,p-Xylenes	100.00	104.00	104	100.00	100.00	100	3.9	75-125	<20	

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Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 04112001 / 04112001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	0.93	93	1.00	0.92	92	1.0	80-120	<15	
Chromium	1.00	0.95	95	1.00	0.95	95	<1	80-120	<15	
Lead	1.00	0.97	97	1.00	0.98	98	1.0	80-120	<15	
Nickel	1.00	0.93	93	1.00	0.91	91	2.1	80-120	<15	

QC Batch Number: 04112001 / 04112001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	1.00	100	80-120						
Chromium	1.00	1.00	100	80-120						
Lead	1.00	1.03	103	80-120						
Nickel	1.00	1.01	101	80-120						

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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 03292001 / 03292001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Nitrate	0.50	0.52	104	0.50	0.52	103	<1	80-120	<15	
Nitrite	0.20	0.19	97	0.20	0.19	97	<1	80-120	<15	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Carbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Hydroxide (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Chloride (Cl), Total	20.00	19.40	97	20.00	19.40	97	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	2.00	1.88	94	2.00	1.86	93	1.0	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Sulfate	20.00	18.40	92	20.00	18.40	92	<1	80-120	<15	
Surfactants (MBAS)	0.20	0.19	94	0.20	0.19	94	<1	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.00	1.01	101	1.00	1.01	101	<1	80-120	<15	
Calcium	20.00	21.00	105	20.00	20.40	102	2.9	80-120	<15	
Copper	1.00	0.96	96	1.00	0.95	95	1.0	80-120	<15	
Iron	1.00	1.03	103	1.00	1.02	102	<1	80-120	<15	
Magnesium	20.00	21.40	107	20.00	20.80	104	2.8	80-120	<15	
Manganese	1.00	0.92	92	1.00	0.91	91	1.0	80-120	<15	
Potassium	10.00	9.80	98	10.00	9.60	96	2.0	80-120	<15	
Sodium	20.00	21.20	106	20.00	20.40	102	3.8	80-120	<15	
Zinc	1.00	0.97	97	1.00	0.97	97	<1	80-120	<15	

QC Batch Number: 03292001 / 03292001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Nitrate	0.50	0.52	104	80-120						
Nitrite	0.20	0.19	97	80-120						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
18364	03/29/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03292001 / 03292001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Carbonate (as CaCO3)	20.00	20.00	100	80-120						
Hydroxide (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	138.47	98	80-120						
Fluoride, Total	2.00	1.88	94	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	18.80	94	80-120						
Surfactants (MBAS)	0.20	0.19	95	80-120						
Total Dissolved Solids	100.00	92.00	92	80-120						
Aluminum	1.00	1.08	108	80-120						
Calcium	20.00	21.40	107	80-120						
Copper	1.00	0.99	99	80-120						
Iron	1.00	1.08	108	80-120						
Magnesium	20.00	20.80	104	80-120						
Manganese	1.00	0.98	98	80-120						
Potassium	10.00	10.00	100	80-120						
Sodium	20.00	21.00	105	80-120						
Zinc	1.00	1.01	101	80-120						

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
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Site

Strathern Landfill
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
18364	03/29/2001	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 04172001 / 04172001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.47	93	0.50	0.46	92	1.0	80-120	<15	

QC Batch Number: 04172001 / 04172001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	ND	ND	<1	<15	0.50	0.47	94	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Number of Pages 13
Date Received 09/25/2001
Date Reported 10/18/2001

Job Number	Order Date	Client
19931	09/25/2001	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern
Sun Valley, CA

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Gary Mallon Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Braitis
FAX: 323-721-6760
PROJECT NAME: Strathern
PROJECT #: 70111-2-0342
SITE NAME AND ADDRESS: Strathern, Sun Valley, CA

AETL JOB No. 1931

Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
4928A	AE104181	9-25-01	1215	water	various	—
4928C	AE104182	9-25-01	1315	↓	↓	—
Trip Blank	AE104183	9-25-01		↓	↓	—

ANALYSIS REQUESTED

Boron, COD	524.2	General Minerals	Pb, Ni, Cr, Cd
X	X	X	X
X	X	X	X
	X		

TEST INSTRUCTIONS & COMMENTS

- METALS ADDED 09/25 1600

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	11	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☑ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Abra	Signature:	Signature:
Printed Name: Sto Abra	Printed Name:	Printed Name:
Date: 1-25-01 Time: 1485	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY:** 2.	**RECEIVED BY LABORATORY:** 3.
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name: RICARDO ZAMORA
Date: Time:	Date: Time:	Date: 9/25/01 Time: 1415

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: **2**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10082001 / 10082001

Our Lab I.D.				AE104181	AE104182	AE104183	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			09/25/2001	09/25/2001	09/25/2001	09/25/2001	
Date Prepared			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Benzene	0.25	0.50	ND	ND	ND	ND	
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND	ND	
Bromochloromethane	0.25	0.50	ND	ND	ND	ND	
Bromodichloromethane	0.25	0.50	ND	ND	ND	ND	
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND	ND	
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND	ND	
n-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
sec-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
tert-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
Carbon tetrachloride	0.25	0.50	ND	ND	ND	ND	
Chlorobenzene	0.25	0.50	ND	ND	ND	ND	
Chloroethane	0.25	0.50	ND	ND	ND	ND	
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND	ND	
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND	ND	
2-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
4-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND	ND	
Dibromochloromethane	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND	ND	
Dibromomethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
Dichlorodifluoromethane	0.25	0.50	ND	1.3	0.5	ND	
1,1-Dichloroethane	0.25	0.50	ND	3.0	ND	ND	
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10082001 / 10082001

Our Lab I.D.				AE104181	AE104182	AE104183	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			09/25/2001	09/25/2001	09/25/2001	09/25/2001	
Date Prepared			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,1-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
cis-1,2-Dichloroethene	0.25	0.50	ND	0.5	ND	ND	
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
1,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,3-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
2,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,1-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
Ethylbenzene	0.25	0.50	ND	ND	ND	ND	
Hexachlorobutadiene	0.25	0.50	ND	ND	ND	ND	
Isopropylbenzene	0.25	0.50	ND	ND	ND	ND	
p-Isopropyltoluene	0.25	0.50	ND	ND	ND	ND	
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND	ND	
Naphthalene	0.5	1.0	ND	ND	ND	ND	
n-Propylbenzene	0.25	0.50	ND	ND	ND	ND	
Styrene	0.25	0.50	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
Tetrachloroethene	0.25	0.50	ND	6.9	5.4	ND	
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
Trichloroethene	0.25	0.50	ND	0.9	0.4J	ND	
Trichlorofluoromethane	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND	ND	
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND	ND	
o-xylene	0.25	0.50	ND	ND	ND	ND	
m,p-Xylenes	0.5	1.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE104181	AE104182	AE104183	
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.	% Rec.	
Bromofluorobenzene	75-125		82	84	79	84	
1,2-Dichlorobenzene	75-125		75	79	74	72	

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ANALYTICAL RESULTS

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Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QC Batch Number: 09262001 / 09262001

Our Lab I.D.				AE104181	AE104182		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			09/25/2001	09/25/2001	09/25/2001		
Date Prepared			09/26/2001	09/26/2001	09/26/2001		
Preparation Method			3005A	3005A	3005A		
Date Analyzed			09/28/2001	09/28/2001	09/28/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Cadmium	0.01	0.05	ND	ND	ND		
Chromium	0.01	0.05	ND	0.01J	0.02J		
Lead	0.05	0.10	ND	ND	ND		
Nickel	0.01	0.05	ND	ND	ND		

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Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Analytes			Chemical Oxygen Demand	Boron		
Methods of Analyses			410.4	SM-4500B		
Date Prepared			10/01/2001	10/02/2001		
Date Analyzed			10/01/2001	10/02/2001		
Matrix			Aqueous	Aqueous		
QC Batch Number			10012001 / 10012001	10022001 / 10022001		
Units			mg/L	mg/L		
Detection Limit			5.0	0.1		
Practical Quantitation Limit			10.0	0.2		
Dilution Factor			1	1		
Lab ID	**Sample ID**	**Sampled**	**Results**	**Results**		
AE104181	4928A	09/25/2001	ND	0.4		
AE104182	4928C	09/25/2001	ND	0.4		
N/A	Method Blank	09/25/2001	ND	ND		

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 09252001 / 09252001

Our Lab I.D.				AE104181	AE104182		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			09/25/2001	09/25/2001	09/25/2001		
Date Prepared			09/25/2001	09/25/2001	09/25/2001		
Preparation Method			Various	Various	Various		
Date Analyzed			09/25/2001	09/25/2001	09/25/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bicarbonate (as CaCO3)	1	2	ND	288	612		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	288	612		
Anions Total (meq/L)	0.01	0.01	ND	8.57	16.7		
Cations Total (meq/L)	0.01	0.01	ND	7.91	15.5		
Ion Balance (percent difference)	0.01	0.01	ND	4.00	3.73		
Nitrate (Total)	0.4	0.4	ND	31.44	24.8		
Chloride (Cl), Total	0.5	1.0	ND	35	112		
Conductivity (umhos/cm @77F)	5	10	ND	817	1,560		
Fluoride, Total	0.1	0.2	ND	0.35	0.31		
Hardness (Ca,Mg) as CaCO3	1	2	ND	356	720		
Nitrite as Nitrogen	0.01	0.02	ND	ND	ND		
pH (pH units)	0.01	0.01	NA	7.31	7.32		
Sulfate	5	10	ND	62.4	44.6		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	501	925		
Aluminum	0.05	0.10	ND	0.11	0.08J		
Calcium	0.25	0.50	ND	89.6	190		
Copper	0.01	0.02	ND	0.02	ND		
Iron	0.03	0.05	ND	0.23	0.40		
Magnesium	0.25	0.50	ND	23.2	46.6		
Manganese	0.005	0.010	ND	ND	ND		
Potassium	0.5	1.0	ND	5.3	7.1		
Sodium	0.25	0.50	ND	31.2	43.6		
Zinc	0.01	0.03	ND	0.44	0.19		

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ANALYTICAL RESULTS

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 10012001 / 10012001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	51.00	102	50.00	50.50	101	<1	80-120	<15	

QC Batch Number: 10012001 / 10012001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	52.50	105	80-120		

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Page: **9**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 10082001 / 10082001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	27.50	110	25.00	28.50	114	3.6	75-125	<20	
Chlorobenzene	25.00	24.50	98	25.00	25.25	101	3.0	75-125	<20	
1,1-Dichloroethene	25.00	24.50	98	25.00	24.00	96	2.1	75-125	<20	
Toluene (Methyl benzene)	25.00	24.00	96	25.00	27.50	110	13.6	75-125	<20	
LCS										
Chloroform (Trichloromethane)	25.00	24.50	98	25.00	21.75	87	11.9	75-125	<20	
Ethylbenzene	25.00	24.25	97	25.00	26.00	104	7.0	75-125	<20	
1,1,1-Trichloroethane	25.00	22.00	88	25.00	20.50	82	7.1	75-125	<20	
Trichloroethene	25.00	25.00	100	25.00	24.25	97	3.0	75-125	<20	
o-Xylene	25.00	25.25	101	25.00	25.25	101	<1	75-125	<20	
m,p-Xylenes	25.00	25.00	100	25.00	26.00	104	3.9	75-125	<20	

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: **10**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 09262001 / 09262001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15	
Chromium	1.00	1.09	109	1.00	1.09	109	<1	80-120	<15	
Lead	1.00	0.99	99	1.00	0.99	99	<1	80-120	<15	
Nickel	1.00	1.09	109	1.00	1.09	109	<1	80-120	<15	

QC Batch Number: 09262001 / 09262001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	1.05	105	80-120						
Chromium	1.00	1.10	110	80-120						
Lead	1.00	1.03	103	80-120						
Nickel	1.00	1.10	110	80-120						

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Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 09252001 / 09252001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Nitrate (Total)	0.50	0.47	93	0.50	0.46	91	2.1	80-120	<15	
Chloride (Cl), Total	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Fluoride, Total	2.00	2.08	104	2.00	2.06	103	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Nitrite as Nitrogen	0.20	0.19	96	0.20	0.19	95	1.0	80-120	<15	
Sulfate	20.00	19.60	98	20.00	19.60	98	<1	80-120	<15	
Surfactants (MBAS)	0.20	0.20	98	0.20	0.19	93	5.2	80-120	<15	
Aluminum	1.00	1.04	104	1.00	1.05	105	<1	80-120	<15	
Calcium	20.00	20.40	102	20.00	20.40	102	<1	80-120	<15	
Copper	1.00	1.07	107	1.00	1.07	107	<1	80-120	<15	
Iron	1.00	1.06	106	1.00	1.06	106	<1	80-120	<15	
Magnesium	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Manganese	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Potassium	10.00	9.50	95	10.00	9.30	93	2.1	80-120	<15	
Sodium	20.00	19.80	99	20.00	19.80	99	<1	80-120	<15	
Zinc	1.00	1.05	105	1.00	1.05	105	<1	80-120	<15	

QC Batch Number: 09252001 / 09252001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Nitrate (Total)	0.50	0.45	90	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	139.89	99	80-120						
Fluoride, Total	2.00	1.96	98	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
Nitrite as Nitrogen	0.20	0.19	94	80-120						

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ANALYTICAL RESULTS

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 09252001 / 09252001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
pH (pH units)	7.00	7.00	100	80-120
Sulfate	20.00	20.00	100	80-120
Surfactants (MBAS)	0.20	0.19	95	80-120
Total Dissolved Solids	100.00	93.00	93	80-120
Aluminum	1.00	1.07	107	80-120
Calcium	1.00	1.02	102	80-120
Copper	1.00	1.08	108	80-120
Iron	1.00	1.07	107	80-120
Magnesium	1.00	1.10	110	80-120
Manganese	1.00	1.05	105	80-120
Potassium	10.00	9.30	93	80-120
Sodium	1.00	1.09	109	80-120
Zinc	1.00	1.06	106	80-120

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: **13**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 10022001 / 10022001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.50	100	0.50	0.52	103	2.9	80-120	<15	

QC Batch Number: 10022001 / 10022001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.4	0.4	<1	<15	0.50	0.46	91	80-120		

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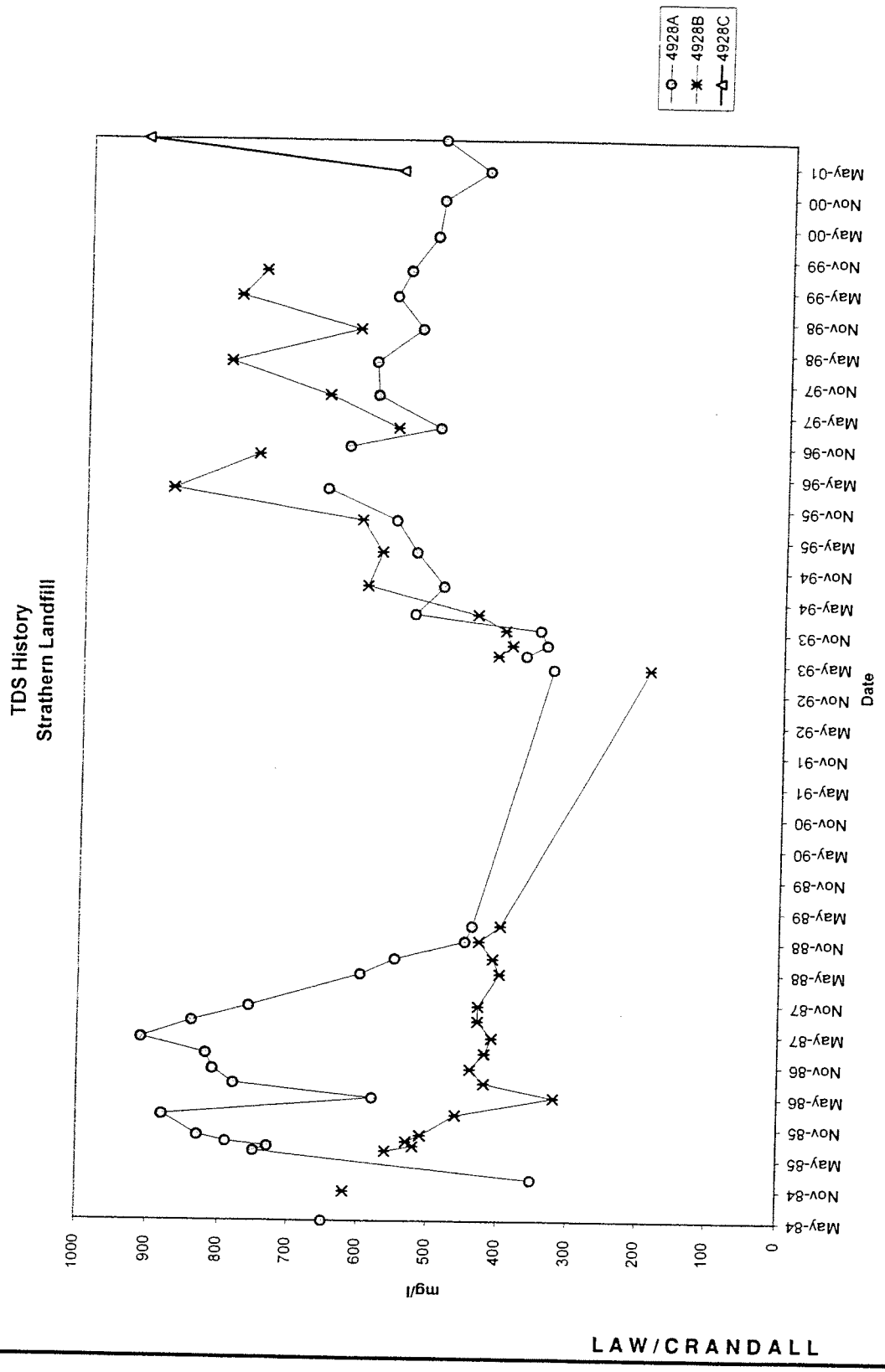
APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

JOB 10111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVP



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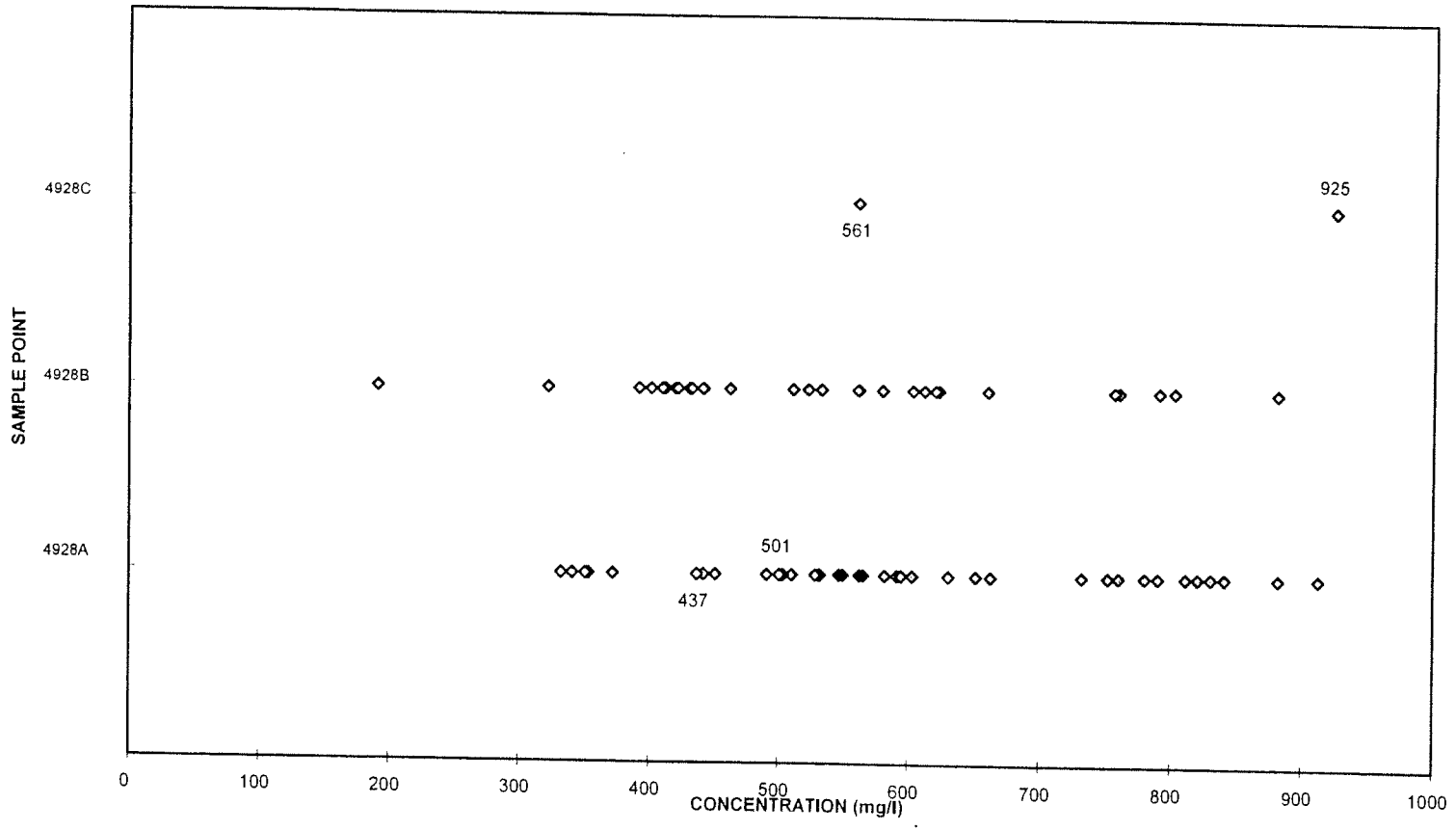
JOB 20111-20346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

TDS
Statistical Distribution



Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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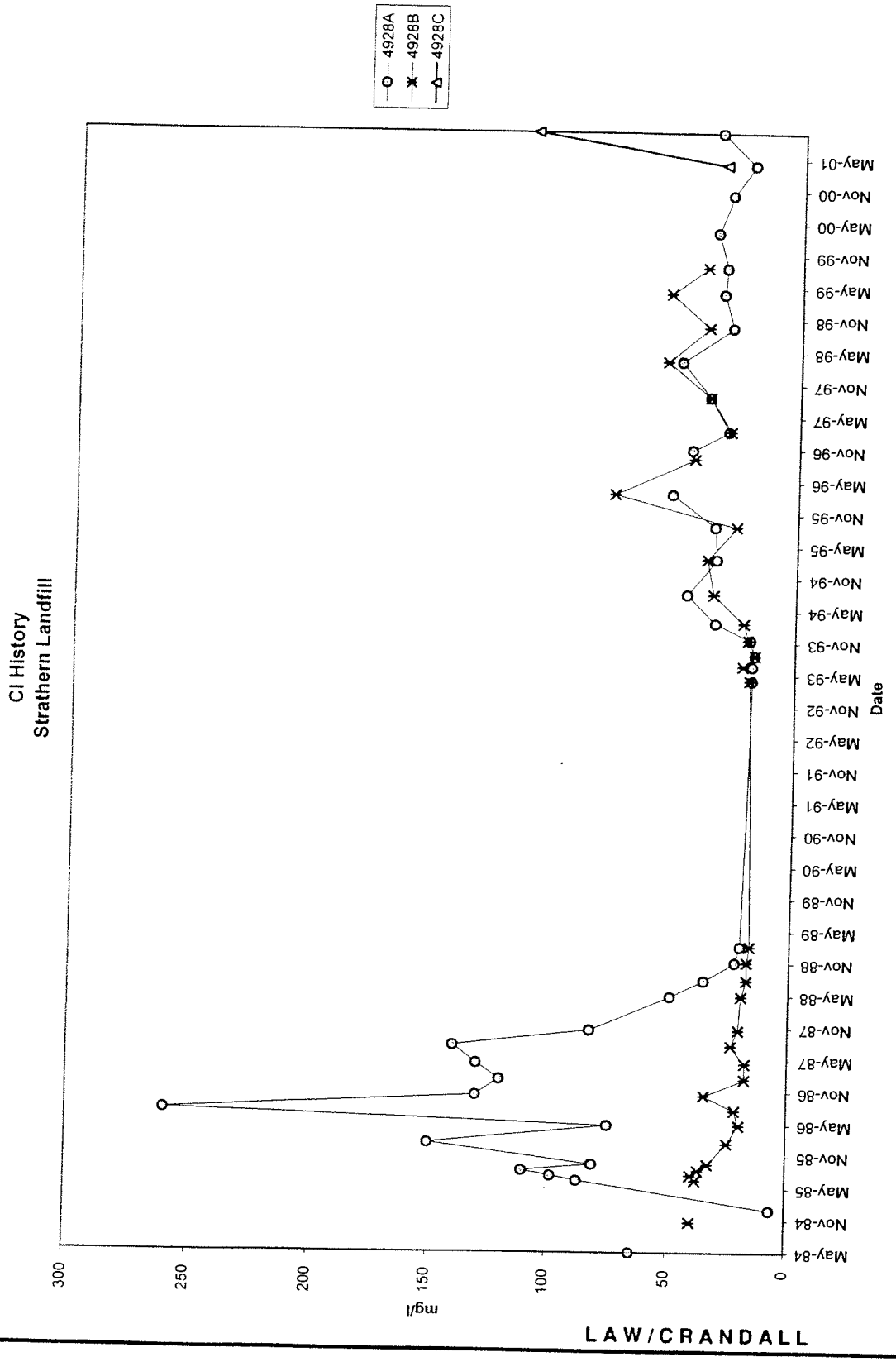
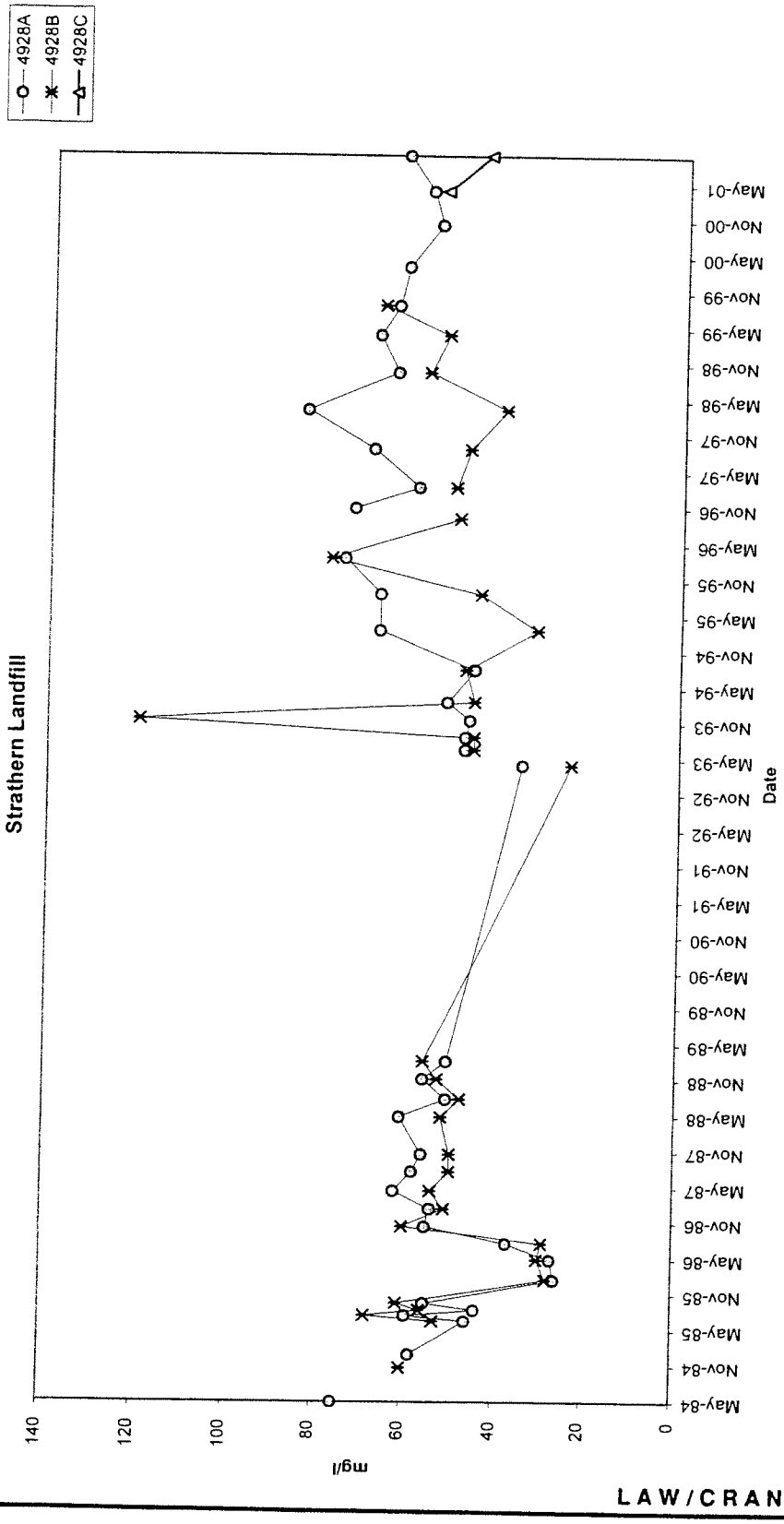
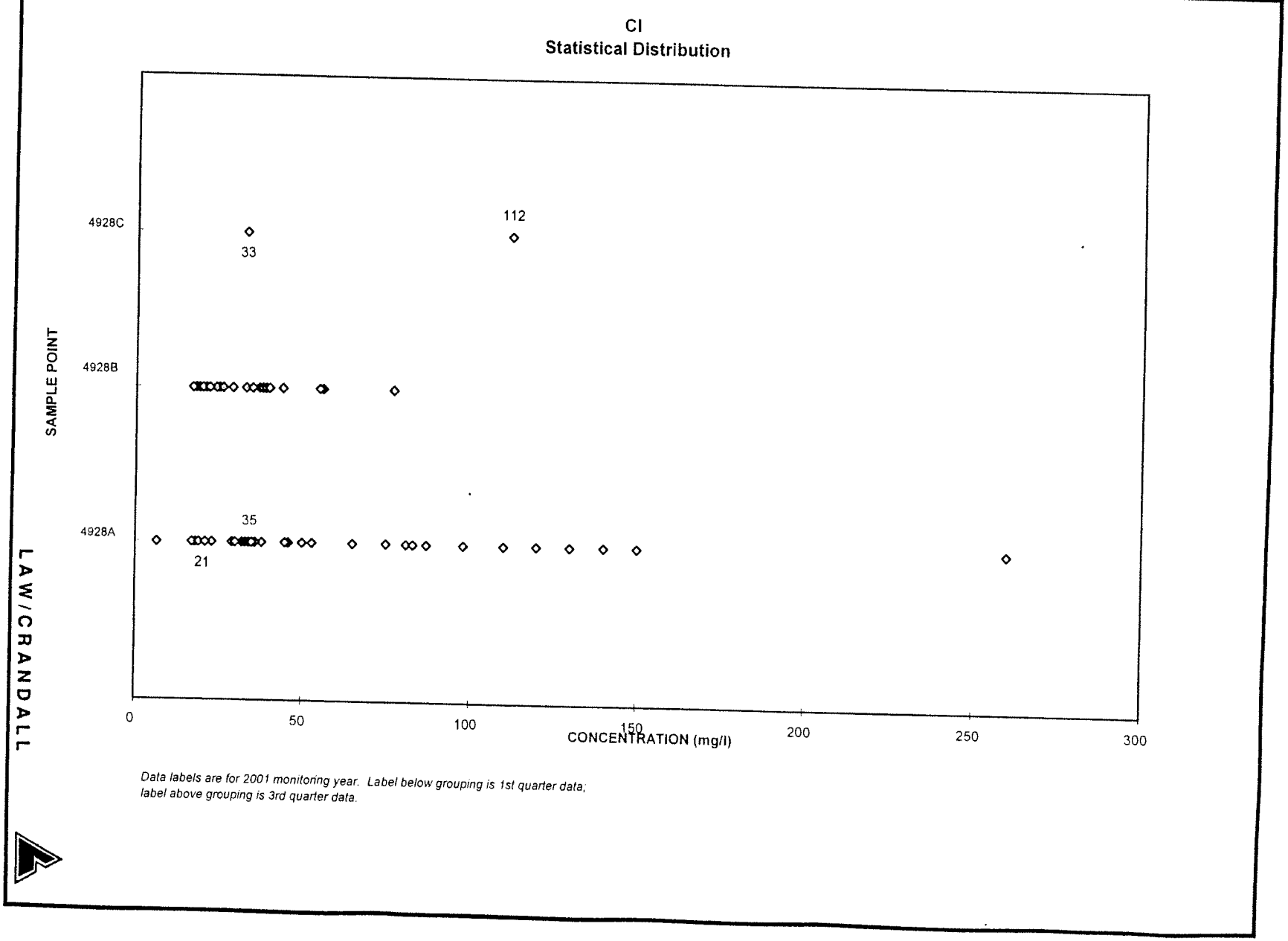
JOB 70111-2-0396 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



JOB 7014-20346 DATE 2-5-02 F.T. ____ DR. ____ O.E. EA W.P. ____ CHKD KVF



JOB 70111-2-0396 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



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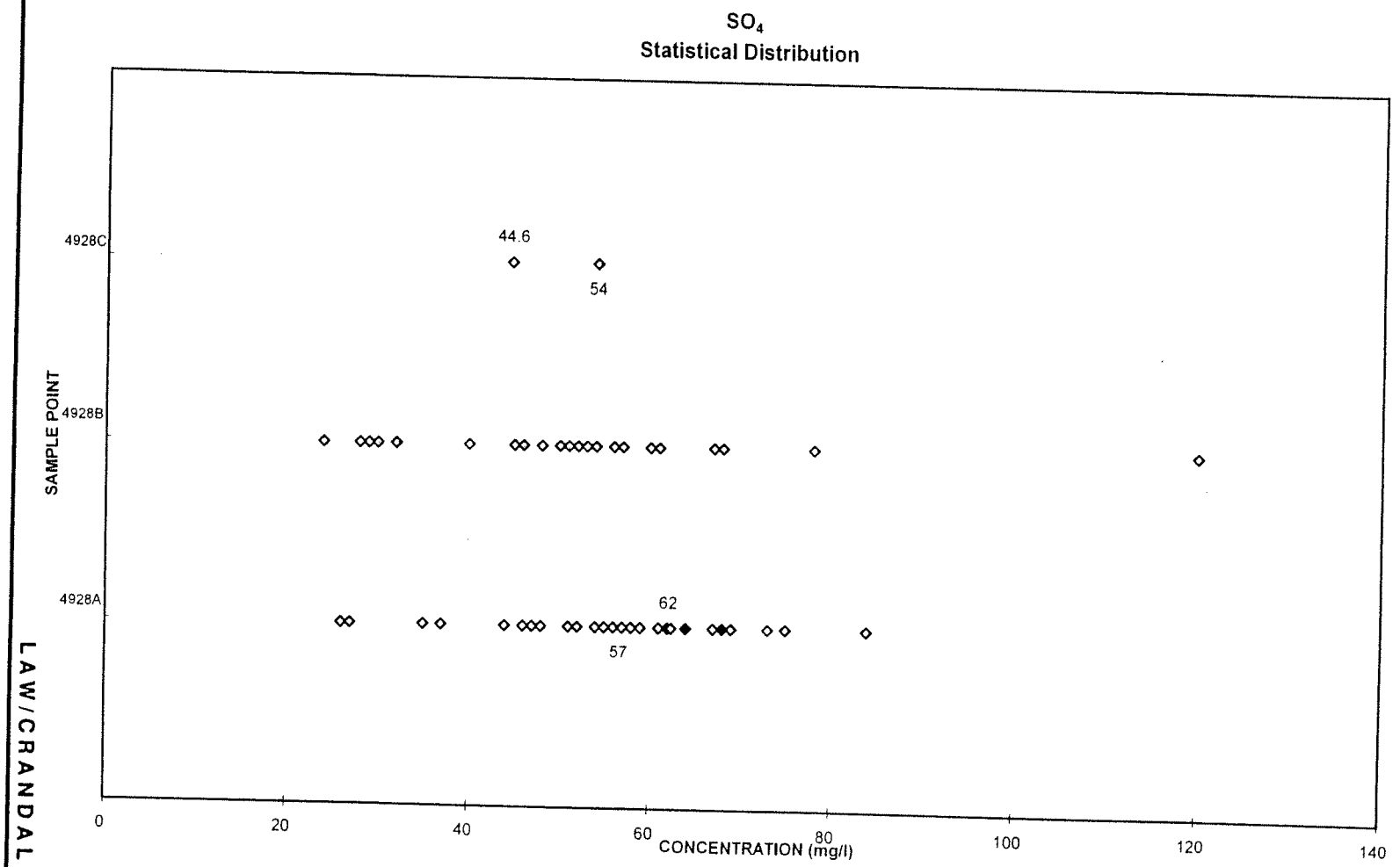
JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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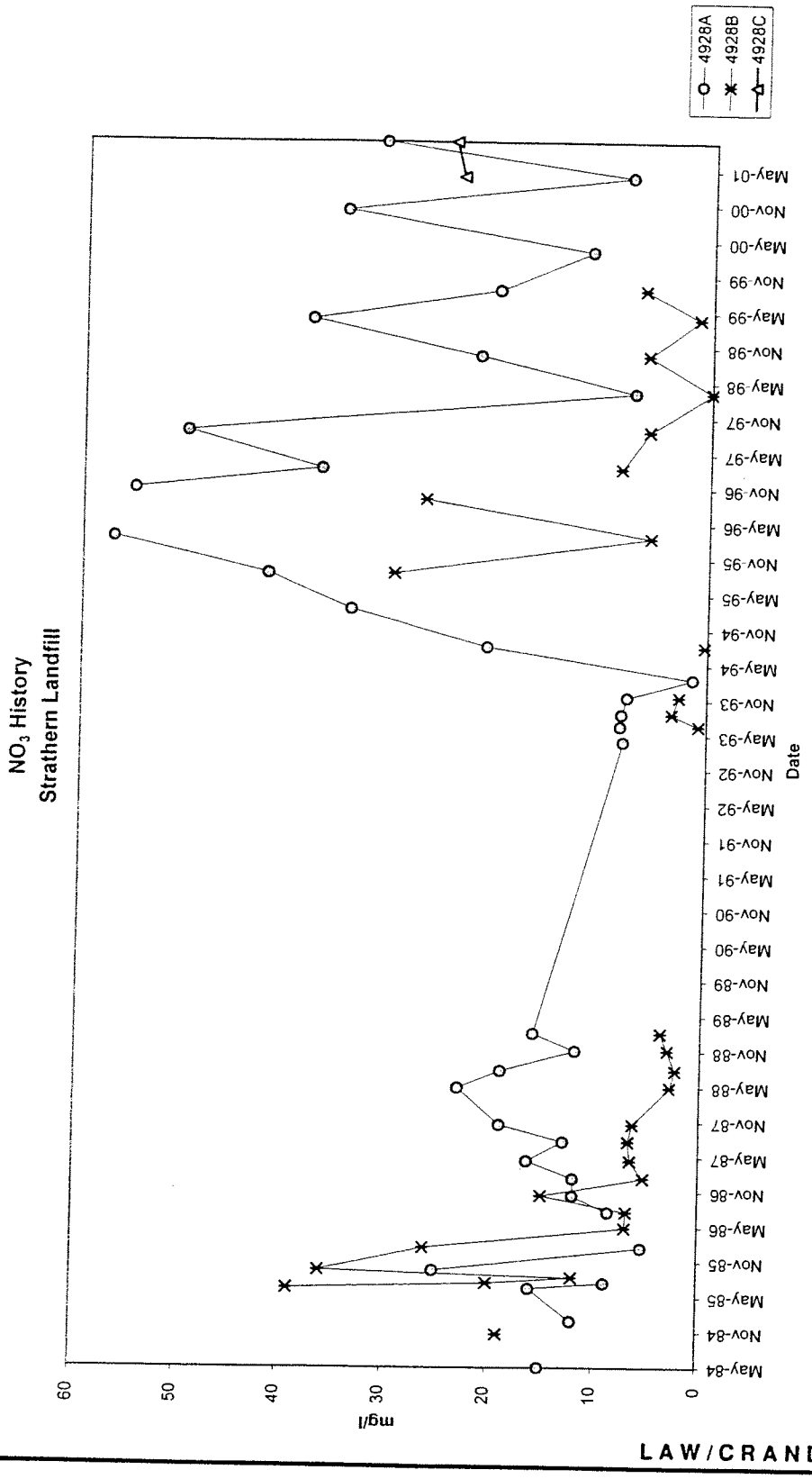
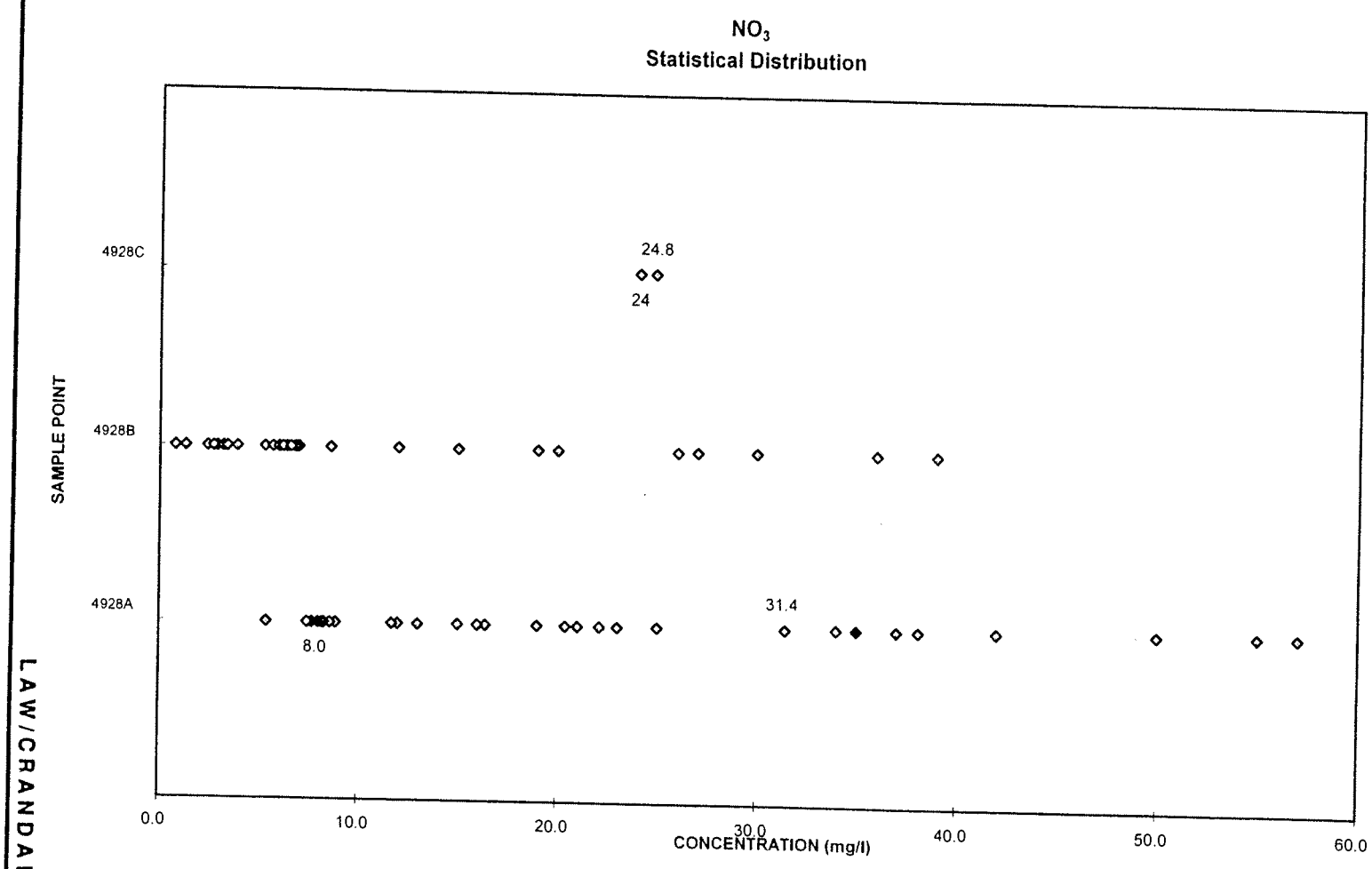
JOB 7011-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EJA W.P. _____ CHKD KVF



JOB 70111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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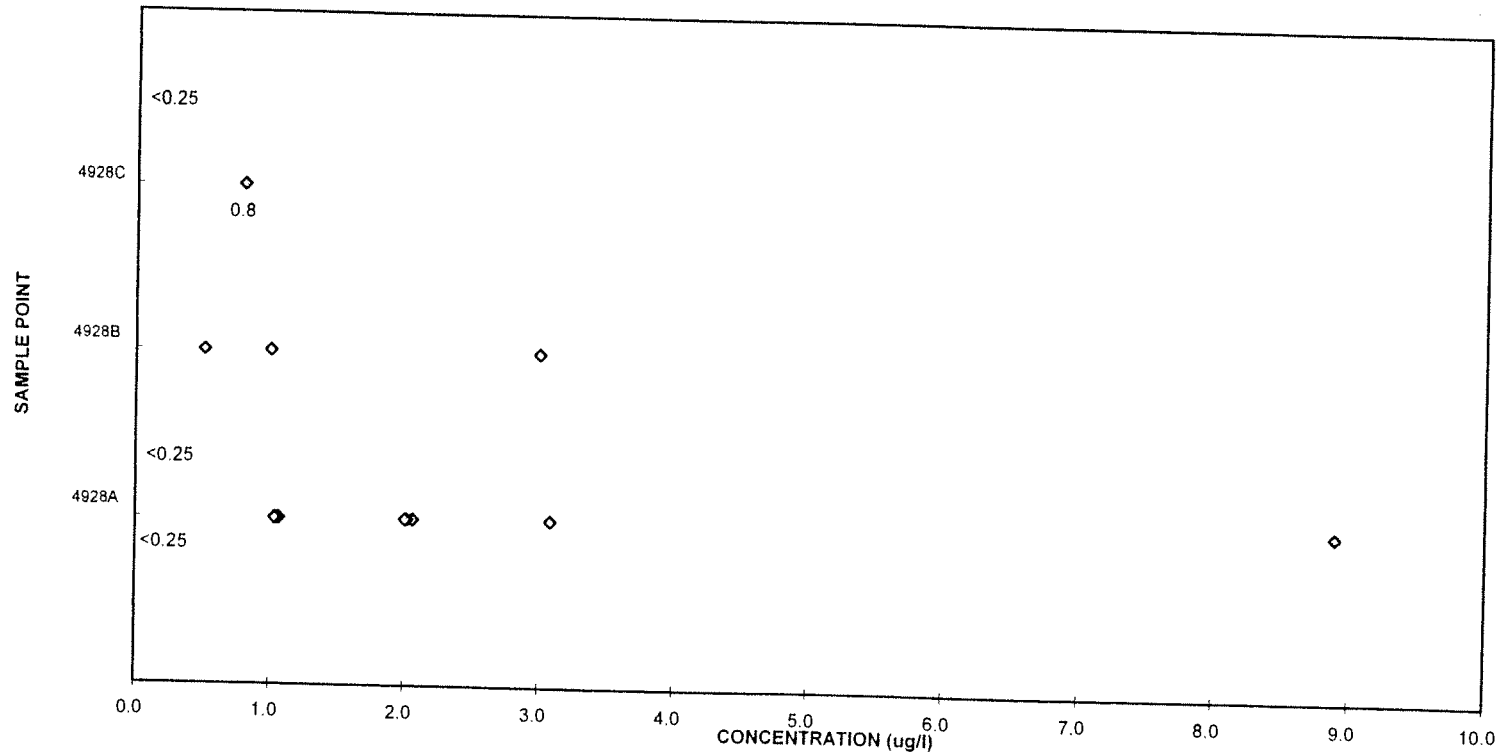
JOB 7011-2-0346 DATE 2-5-02 F.T. ____ DR. ____ O.E. EA W.P. ____ CHKD KVP

JOB 70111-2-0346 DATE 2-5-02 F.T. history-stats Chart 25 DR. O.E. EA W.P. CHKD KVF

1,2-DCA
Statistical Distribution



Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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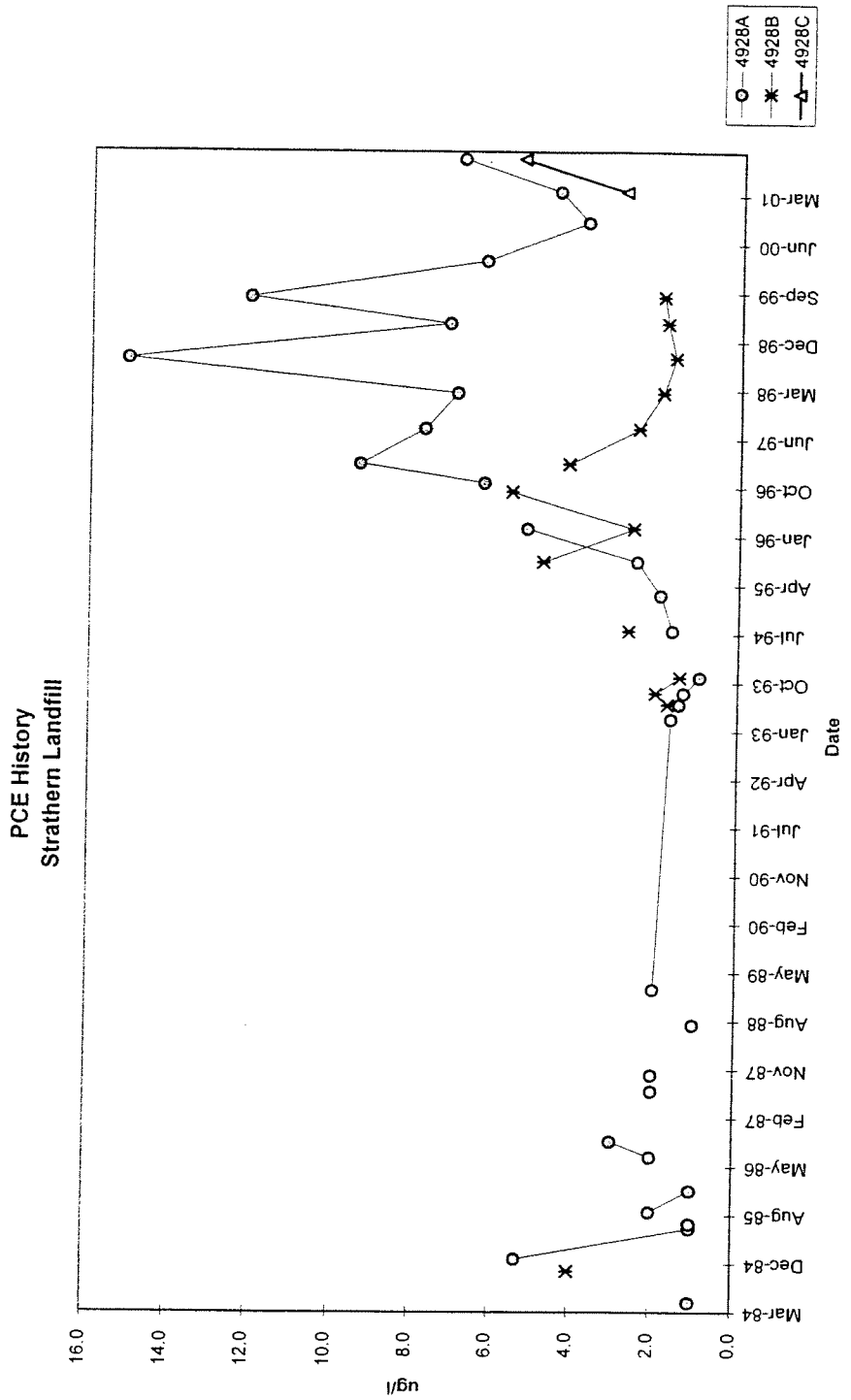
JOB 20111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



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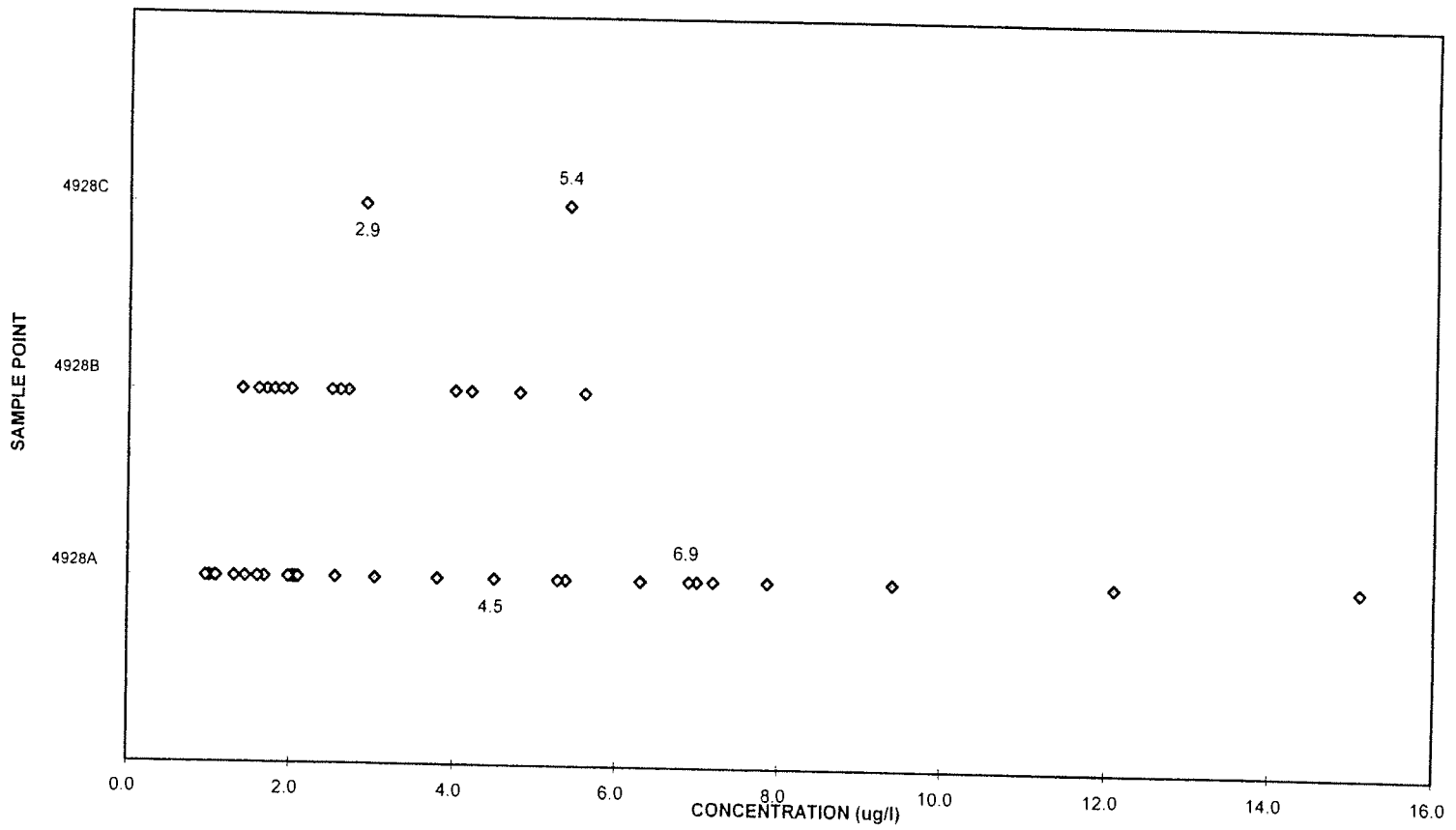
JOB 7011-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EPA W.P. _____ CHKD KVF

PCE
Statistical Distribution



Data labels are for 2001 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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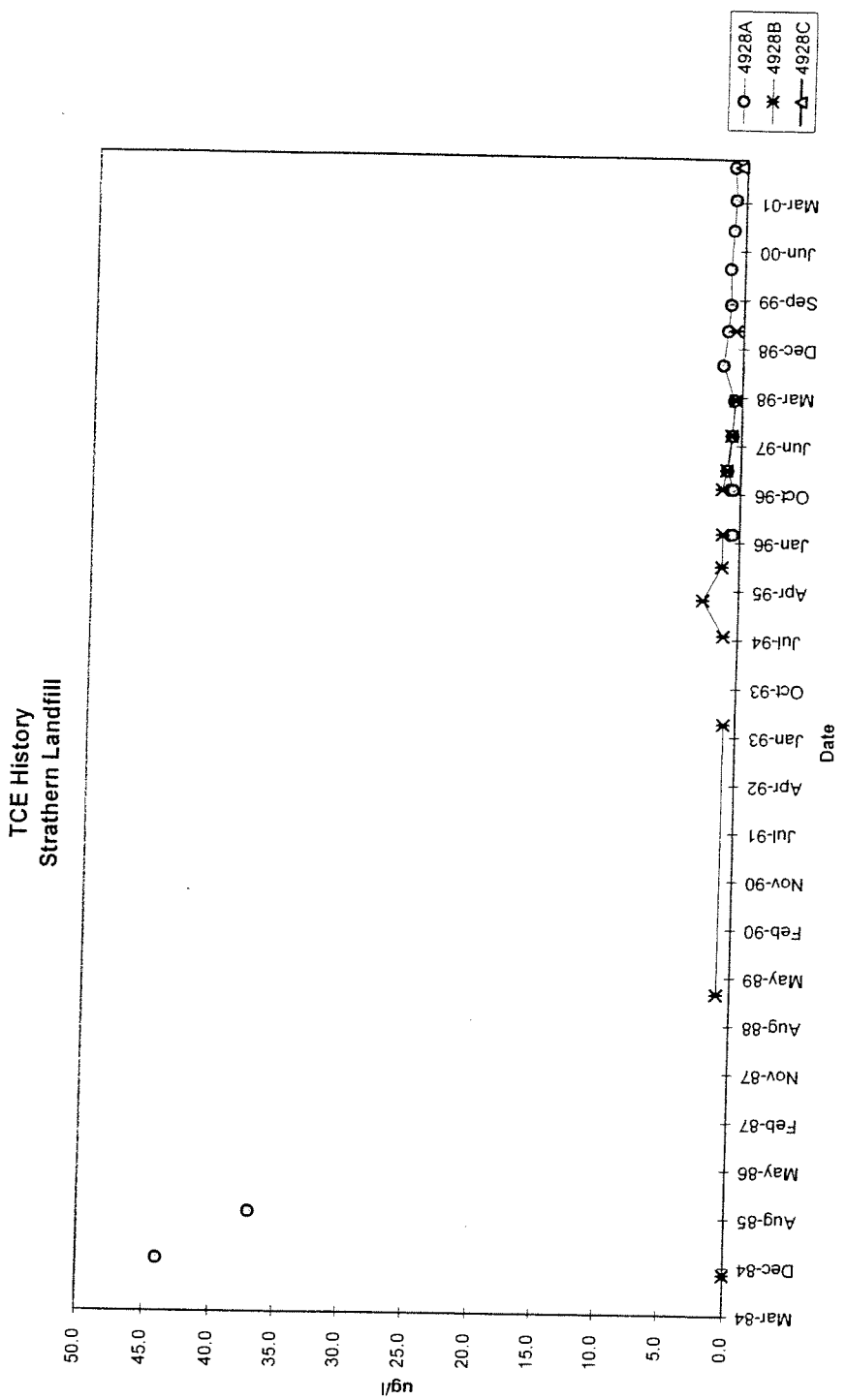
JOB 7011-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF



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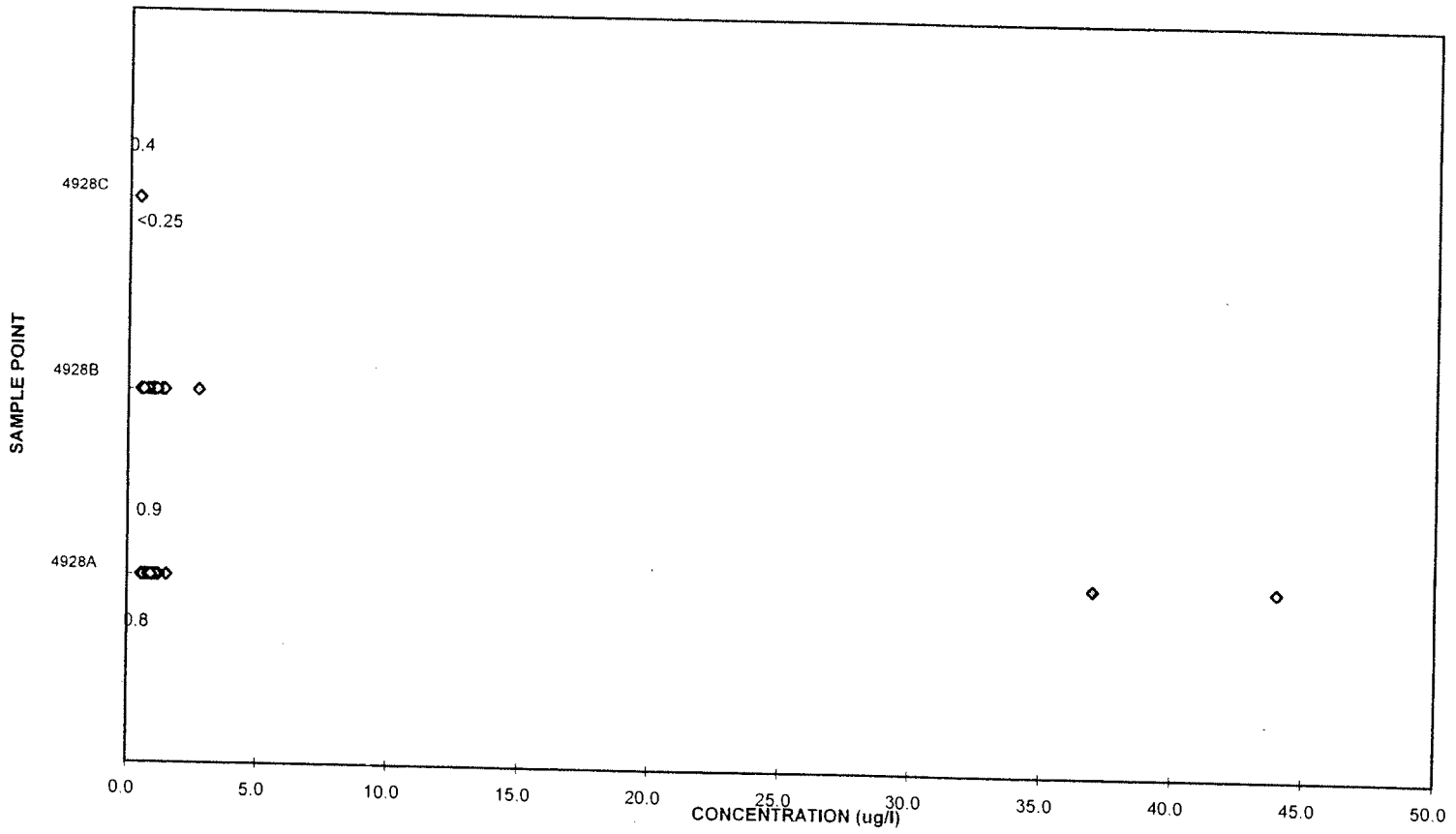
JOB 20111-2-0346 DATE 2-5-02 F.T. _____ DR. _____ O.E. EA W.P. _____ CHKD KVF

TCE
Statistical Distribution



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LAWGIBB GROUP

THIRD QUARTER 2001
GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

October 30, 2001

Law/Crandall Project 70111-2-0346

003399

CONFIDENTIAL

LAW Crandall

October 30, 2001

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **Third Quarter 2001**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the third quarter 2001 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area during the third quarter 2001 have increased since the first quarter 2001. However, due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B was measured dry during the first and third quarter 2001 monitoring events. Recent groundwater measurements during the third quarter 2001 show that monitoring well 4928B continues to be dry. Therefore on March 23, 2001, we requested and received permission from the RWQCB to temporarily monitor onsite upgradient monitoring well 4928C to provide upgradient groundwater quality data for the site until water levels rise and well 4928B is no longer dry. The analytical results of monitoring show that groundwater from 4928C have similar characteristics as well 4928B. We will continue to closely monitor water levels at well 4928B and at the site.

Laboratory analyses indicated that during the third quarter, the groundwater met California Drinking Water Standards for all constituents tested except for iron in up-gradient well 4928C and total dissolved solids (TDS) and tetrachloroethene (PCE) in both wells. Waste disposal activities do not appear to be adversely affecting local groundwater quality.

A Division of LAW Engineering and Environmental Services, Inc.
200 Citadel Drive • Los Angeles, California 90040-1554
323-889-5300 • Fax: 323-721-6700

SCOPE AND LIMITATIONS

Law/Crandall (LAW) measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the third quarter 2001 groundwater monitoring results. Law/Crandall collected groundwater samples on September 25, 2001, and prepared this report.

003401

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples from these wells. Figure 2 shows the monitoring well locations. During this monitoring period, up-gradient well 4928B was dry. Due to the dramatic decrease in regional groundwater levels over the past few years, the site's upgradient well 4928B was measured dry during the first and third quarter 2000 monitoring events and well 4928C was temporarily substituted as the up-gradient well for monitoring. Water levels and groundwater samples were collected at 4928A and 4928C on September 25, 2001. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362
4928C (upgradient)	L.A. By-Products	823.37	375	160-375

RESULTS

This section presents the third quarter 2001 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels on September 25, 2001. The water level at 4928A and 4928C increased approximately 1 foot since March 2001. Groundwater levels remained near the site's historic low groundwater surface levels. This is probably related to the dry summer season and minimal groundwater recharge efforts. According to the Los Angeles County Department of Public Works (LADPW), 9,388 acre-feet of water was spread at Hansen, Branford, and Tujunga spreading

grounds from March 2001 through August 2001 may have contributed to the minor increase of groundwater levels.

The groundwater database in Appendix A contains the historic water level data. Groundwater contours for the third quarter in 2001 are drawn on the Groundwater Contour Map included as Appendix B. Figure 3 contains the historic hydrographs for the two on-site monitoring wells for this quarter.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the southwest during September, we used K in both the north-south, east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.001333 ft/ft in September. Groundwater flow for September was 0.80 ft/day or 292 ft/year to the south-southwest.

GROUNDWATER QUALITY

We collected a groundwater sample from 4928A and 4928C on September 25, 2001 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were performed for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains laboratory results for the current sampling event. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during the third quarter, the groundwater met California Drinking Water Standards for all inorganic constituents tested except total dissolved solids (TDS) in both wells

and iron in up-gradient well 4928C. Figure 4 is a Schoeller plot that compares the most recent inorganic water quality data in 4928B to the first quarter results form well 4928C. Table 2 shows selected third quarter 2001 results compared to California Drinking Water Standards. Appendix C contains the full laboratory report listing all constituents tested.

Organics

Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, cis-1,2-dichloroethene, and dichlorodifluoromethane. Up-gradient well 4928C contained trace amounts of dichlorodifluoromethane, TCE, PCE, and 1,2-DCA. The concentrations of these parameters were below California Drinking Water Standards except for PCE in both wells. The organic compound levels in samples from well 4928C except for the detection of PCE appear to be similar to or higher than recent levels in well 4928B. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

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Table 2: Site Water Quality vs. California Drinking Water Standards, Third Quarter 2001

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) September 2001	4928C (upgradient) September 2001
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	501	925
Chloride (Cl)	250	35	112
Sulfate (SO_4)	250	62.4	44.6
Nitrate (NO_3)	45	31.4	24.8
Iron (Fe)	0.3	0.23	0.4
Manganese (Mn)	0.05	<0.005	<0.005
Zinc (Zn)	5	0.44	0.19
Organic (µg/L)			
Trichloroethene (TCE)	5	0.9	0.4[J]
Tetrachloroethene (PCE)	5	6.9	5.4
1,1-dichloroethane (1,1-DCA)	5	3.0	< 0.25
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.5	< 0.25
dichlorodifluoromethane		1.3	0.5
1,2 - dichloroethane (1,2-DCA)	0.5	< 0.25	< 0.25

** Source: CCR, Title 22, Division 4, Chapter 15*

Prepared by/Date: EA/10-24-01 Chk'd by/Date: KF/10-25-01

CONCLUSIONS AND RECOMMENDATIONS

Water levels in the third quarter of 2001 increased slightly from levels measured in the first quarter of 2001. Dry summer season and minimal recharge operations at the Hansen, Branford, and Tujunga spreading grounds may have contributed to the slight increase in groundwater levels. There does not appear to be an association between landfill operations and changes in groundwater character. The potential for contamination is low due to the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible. Historically, low levels of volatile organic compounds have been present in both up-gradient and down-gradient monitoring wells.

Well 4928A showed levels of organic and inorganic constituents similar to previous quarters. We will continue to closely monitor water levels at well 4928B and at the site. We will resume monitoring 4928B as soon as water levels rise and well 4928B is no longer dry. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban, Jr.
Staff Engineer

William J. O'Braitis, CEG 2037
Principal Geologist

G:\PROJECTS\70111 ENVIRONMENTAL\92_PROJ\20346\DELIVERABLES\2001\0346Q3-01.DOC/ETA:swb
(3 copies submitted)

003406

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 31ST day of OCTOBER, 2001, at Burbank, California.

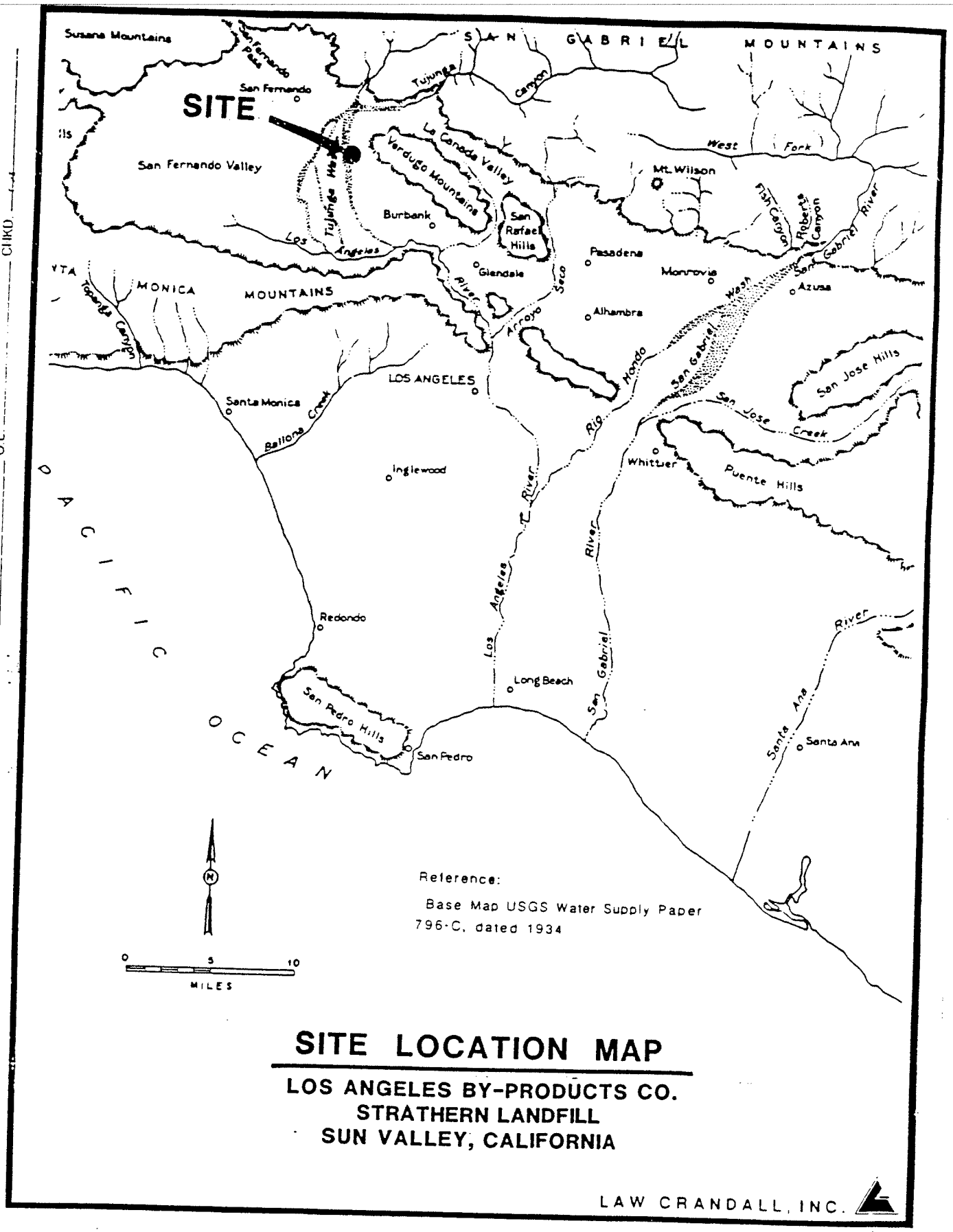
LOS ANGELES BY-PRODUCTS COMPANY

VICE PRESIDENT

Mike McAllister
President

FIGURES

CONFIDENTIAL



SITE LOCATION MAP

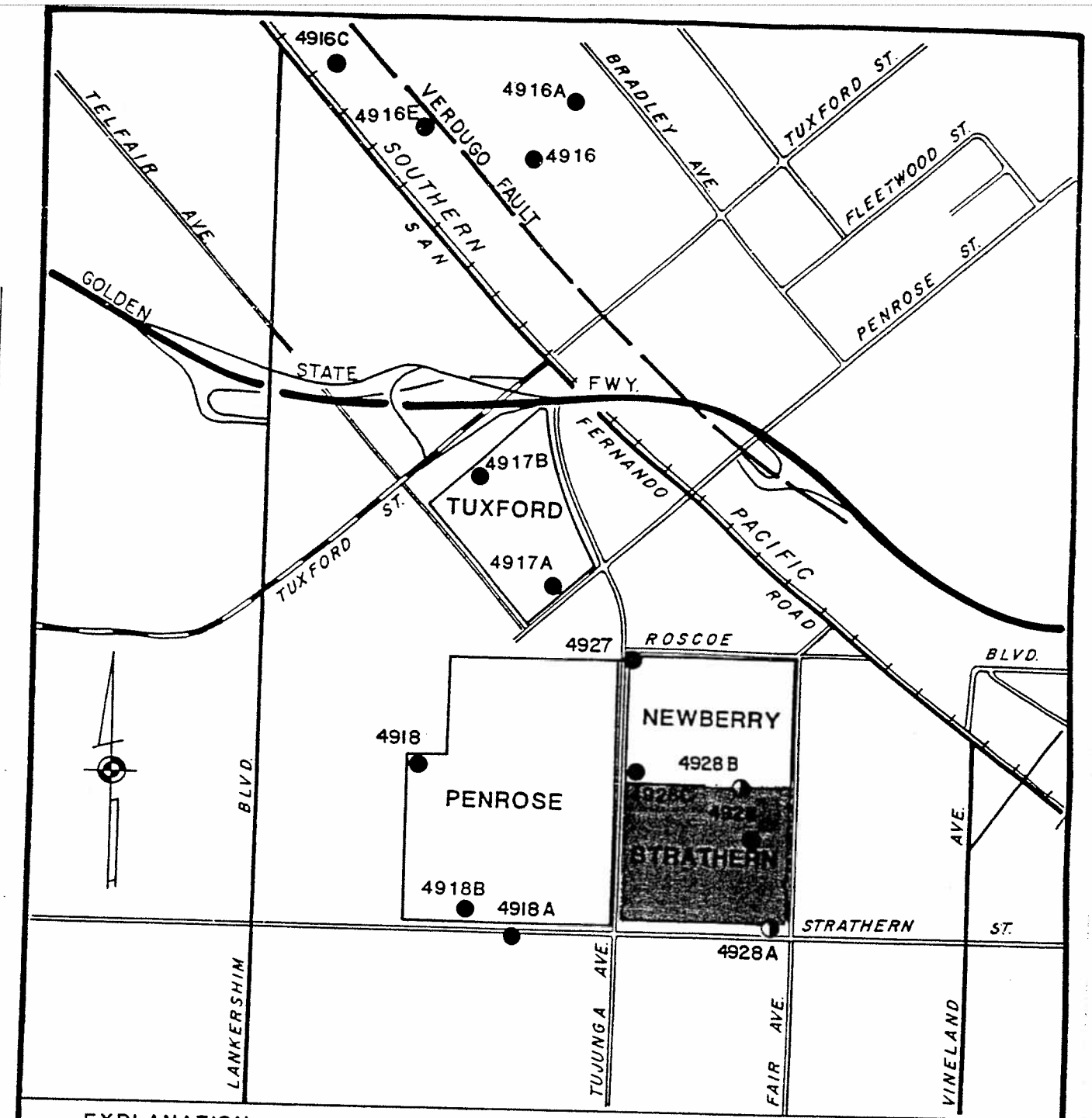
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003409

CONFIDENTIAL



EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:
BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000
SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY , CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2

003410

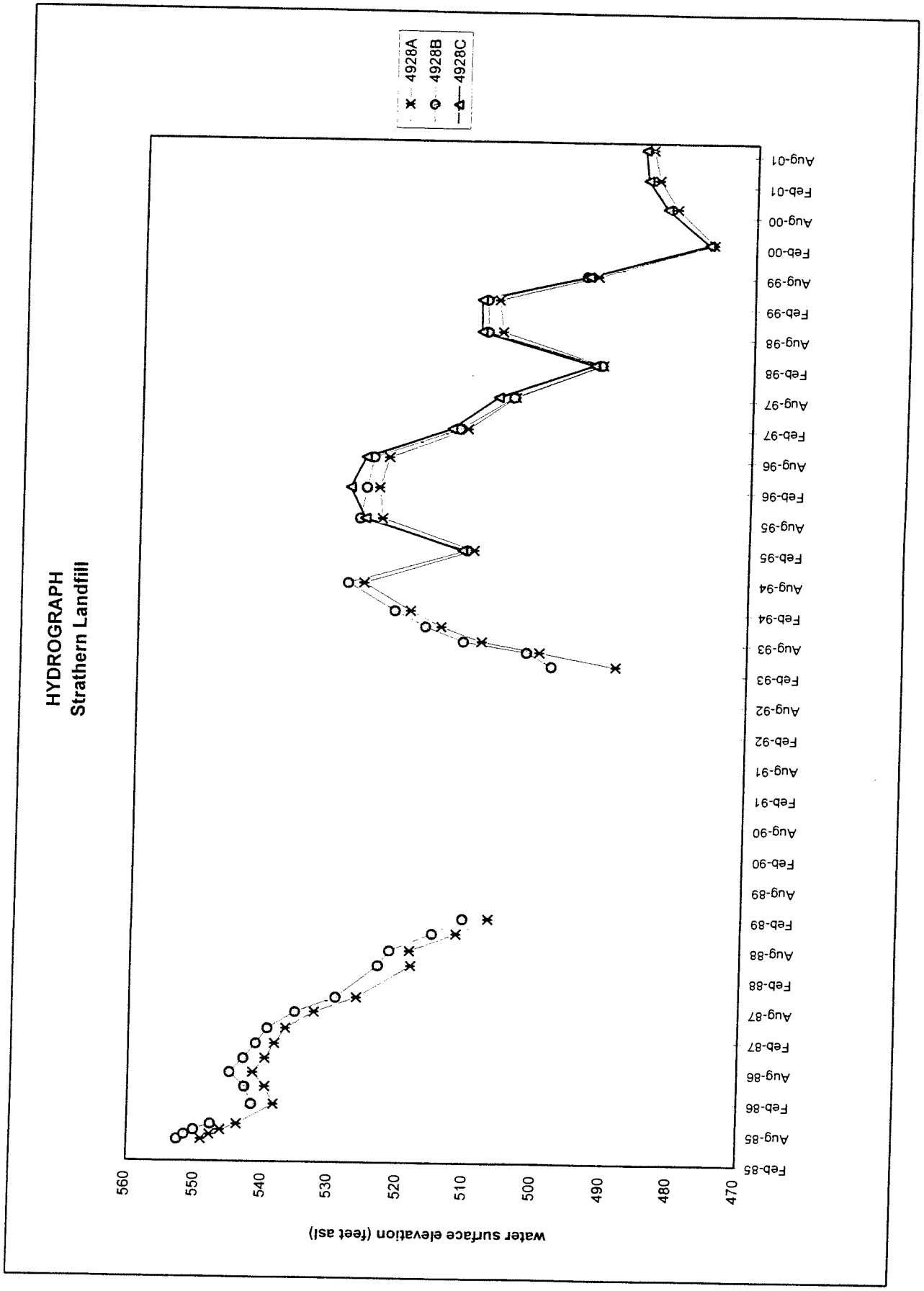

HYDROGRAPH
Strathern Landfill
4928A
4928B
4928C
water surface elevation (feet asl)
560
550
540
530
520
510
500
490
480
470
Feb-85
Aug-85
Feb-86
Aug-86
Feb-87
Aug-87
Feb-88
Aug-88
Feb-89
Aug-89
Feb-90
Aug-90
Feb-91
Aug-91
Feb-92
Aug-92
Feb-93
Aug-93
Feb-94
Aug-94
Feb-95
Aug-95
Feb-96
Aug-96
Feb-97
Aug-97
Feb-98
Aug-98
Feb-99
Aug-99
Feb-00
Aug-00
Feb-01
Aug-01

FIGURE 3

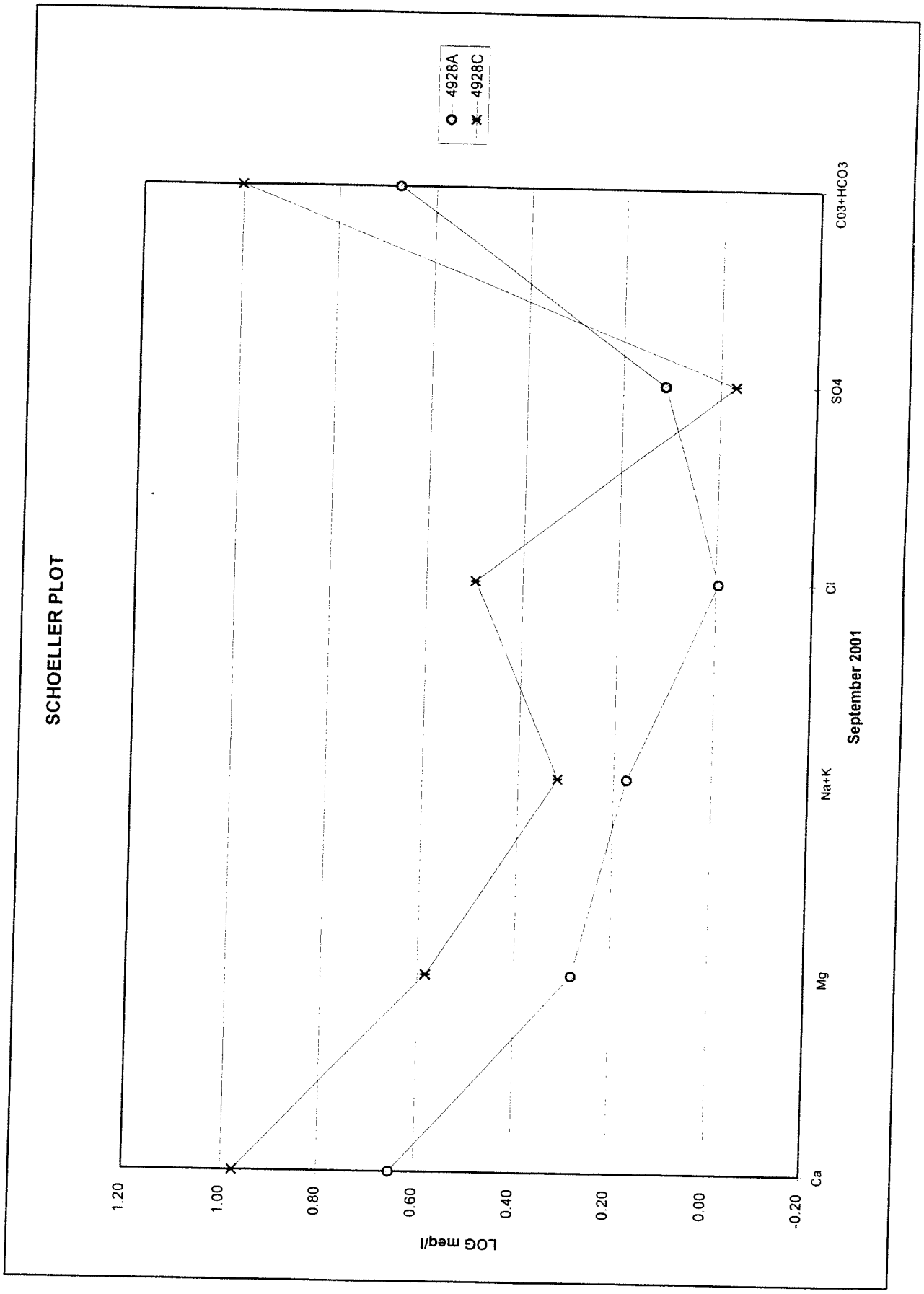

SCHOELLER PLOT
4928A
4928C
LOG meq/l
1.20
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
Ca
Mg
Na+K
Cl
SO4
C03+HCO3
September 2001

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB 111-95.11 DATE 10-01 T. ____ R. ____ E. ____ IKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803.78								7.20	120	28	48	6.0	0 0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.70	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	89	1100	89.0	506	1300	7.00	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	88	1180	102.0	480	1300	6.90	120	34	93	8 6	0 0	620	59	98	8 9			730	0.06	7 5	
4928A	14-Aug-85		548.41	8.8	74	1250	22.5		1400	7.60	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120	
4928A	19-Sep-85		543.93	8.3	68	1250	40.5	555	1500	6.80	250	35	78	6.0	0.0	670	55	81	25.0			830	<0 05	14.0	
4928A	18-Jan-88		538.51	7.0	86	1400		180	1400	7.00	160	40	91	8.6	0 0	620	26	150	5 4			880	<0.05	20.0	
4928A	29-Apr-88		539.84	6.8	68	900	68.0	350	1100	7.80	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-88		541.87	7.3	69	1200	68.0	460	1300	7.10	170	38	80	8.0	0.0	390	37	260	8.6			780	0.11	5 0	
4928A	15-Oct-88		539.90	5.9	67	1200	26.0	470	1400	7.40	180	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0 05	3.0	
4928A	14-Jen-87		538.50	6.9	66	340	75.0	460	1400	7.00	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		538.88	5.8	89	1100	42.5	490	1500	8.80	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.81	7.2	70	1200	35.0	515	1400	7.00	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20 0	
4928A	21-Oct-87		528.40	6.9	66	760	34.5	436	1300	7.70	140	34	82	8.5	<0.6	590	56	83	19 0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8 0	66	950	32.0	203	1000	7.30	110	83	63	6.4	<0.6	480	81	50	23 0	0.3	0 34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.40	99	24	51	5.6	<0.6	442	51	36	19 0	0.34	0 30	550	10.0		<0 08
4928A	08-Nov-88		511.81	7.2	85	700	32 0	350	760	7.20	91	26	49	5.6	<0.6	370	56	23	12.0	0 22	0 20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7 0	86	700	35.0	360	720	7.20	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0 18
4928A	02-Apr-93		489.42	7.9	67	350	37	284	590	7.60	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	610	7.50	72	18	29	4.5	<0.6	290	48	18	8 3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	87	550	25	244	810	7.10	73	18	30	4.8	<0.6	290	48	17	8 2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.40	68	500	22	248	600	7.40	69	17	29	4 5	<0.8	290	47	19	7.7		0.84	350	<8		
4928A	21-Feb-94		519.78	7.20	66	850	50	348	830	7.10	100	24	45	5.9	<0.6	430	52	34	1 4	0.3	0.28	530			
4928A	05-Aug-94		526.64	7.00	66	700	55	356	820	7.00	91	23	39	5.4	<1	330	48	46	21	0.26	0 48	490			
4928A	20-Feb-95		510.49						830	6.90	97	25	38	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.00	68	650	100	386	900	8.90	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.00	65	1015	75	400	1100	6.80	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	860	<6		
4928A	23-Aug-98		523.41																						
4928A	11-Sep-96		NM																						
4928A	31-Oct-98		516.47	7.40	65	995	130	348	960	7.10	120	30	47	6.4	<10	360	73	45	55	0.28	0.48	830	<8		
4928A	14-Feb-97		511.81	7.20	85	830	50	420	850	6.90	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	28-Aug-97		504.90	7.00	67	825	34	372	890	6.60	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.30	68	881	38	320	890	7.25	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.17	86	785	25		816	7.04	96.8	24.8	31.2	5.0	<2	358	64	29	22.1	0.4	0.40	528	<6		
4928A	30-Mar-99		507.59	7.60	70	829		378	870	7.34	96.3	25.2	32.8	4.9	<2.0	324	68	33	38	0.3	0.50	565	<8		
4928A	25-Aug-99		493.23	7.46	87	902	37	372	854	7.00	100	27	35.7	4.5	<2.0	332	64	32	20	0.3	0.40	548	<8		
4928A	10-Mar-00		478.16	7.25	64	528	35	340	800	7.13	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2	0.40	509	22		
4928A	09-Oct-00		481.63	6.76	67	800	30	372	790	6.81	93.9	24.2	32.6	5.5	<1	286	55	30	35.0	0.2	0.40	501	<5		
4928A	29-Mar-01		484.40	7.44	65	733	28	378	733	7.34	87.1	22.1	32.1	5.3	<1	290	57	21	8.0	<0.1	<0.1	437	<5		
4928A	25-Sep-01		485.40	8.10	88	511	32	156	817	7.31	89.8	23.2	31.2	5.3	<1	288	62.4	35	31.4	0.4	0.35	501	<5		

NM = Not measured

LAW/CRANDALL

003414

CONFIDENTIAL

JOB 3111 [illegible] DATE 10 [illegible]-91 E.T. ___ IR. ___ E. ___ IKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

POINT	DATE	ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
		TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
	MCLs	5	5	0.5	6	0.5	1.0	0.05	0.05	0.005	0.05	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-66	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-88	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-88	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.810	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96																			
4928A	11-Sep-96																			
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	28-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.8	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.5	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.2	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.0	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL
4928A	10-Mar-00	1.1	6.3	<0.25	<0.25	<0.25	0.3			<0.005	<0.01	0.08	0.08		<0.005	<0.05	<0.01		0.20	AETL
4928A	09-Oct-00	0.9	3.8	<0.25	<0.25	<0.25	0.08[J]			<0.005	0.02	<0.01	<0.03		<0.005	<0.05	<0.01		0.19	AETL
4928A	29-Mar-01	0.8	4.5	<0.25	<0.25	<0.25	<0.05			<0.01	<0.01	<0.01	0.06		<0.005	<0.05	<0.01		0.16	AETL
4928A	25-Sep-01	0.9	6.9	<0.25	<0.25	<0.25	0.11			<0.01	0.01[J]	0.02	0.23		<0.005	<0.05	<0.01		0.44	AETL

NM = Not measured

LAW/CRANDALL

003415

CONFIDENTIAL

JO 3111 15 5 D 10 -d F.T. DR. E. HKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS (ppm)					LABORATORY ANALYSES						GENERAL MINERAL(ppm)								
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.10	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.10	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.90	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.80	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.90	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.20	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.00	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.40	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	880	7.80	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	68	500	16.5	240	700	7.30	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.00	80	22	33	4.0	<0.6	340	54	18	6.8	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.40	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.90	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88		523.37	8.6	66	455	25.0	260	710	7.80	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88	823.17	521.77	7.4	68	335	25.0	336	680	7.50	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	8.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.20	83	25	51	4.7	<0.6	380	53	18	3.2	0.18	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	880	7.30	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
4928B	02-Apr-93	823.09	498.82	7.7	82.0	240	7	196	410	8.10	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69.0	500	45	300	690	7.00	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79		68.0	600	50	286	680	6.50	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67.0	550	33	320	690	7.10	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<8		
4928B	21-Feb-94		522.09	7.3	89.0	525	65	332	730	7.10	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68.0	950		528	1000	6.80	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74.0	1000		NA	970	7.10	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	8.9		
4928B	24-Aug-95		527.45	7.0	72.0	800	137	524	1100	7.00	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75.0	820	35	548	1400	6.80	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61																						
4928B	11-Sep-96		NM	7.0	71.0	1000		595	1100	6.90	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69.0	930	79	540	910	7.00	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.60	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	73.6	1152		502	1110	7.00	97	35	81	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	69.8	835			1020	7.09	72	22	101	7.2	<2.0	438	57	39	6.2	0.3	0.3	818	<8		
4928B	30-Mar-99		509.34	6.9	72.6	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<6.0		
4928B	25-Aug-99	461.09	494.85	7.1	78.0	1240		628	1180	8.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3	0.3	754	<6.0		
4928B	10-Mar-00		DRY																						
4928B	09-Oct-00		DRY																						
4928B	29-Mar-01		DRY																						

NM = Not measured

LAW/CRANDALL

003416

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JOB 70111-2-0346 DATE 10-Apr-01 F.T. ____ R. ____ E. ____ IKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	18-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	< 0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96																			
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.6	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.96	AETL
4928B	30-Mar-99	0.6	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL
4928B	10-Mar-00																			
4928B	09-Oct-00																			
4928B	29-Mar-01																			

NM = Not measured

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003417

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JO 3111 354 D 10 1-c F.T. _____ DR. _____ C.E. _____ CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL (ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928C	20-Feb-95	823.37	512.30																						
4928C	24-Aug-95		526.72																						
4928C	23-Feb-96		528.98																						
4928C	23-Aug-96		528.79																						
4928C	14-Feb-97		514.27																						
4928C	26-Aug-97		507.48																						
4928C	12-Mar-98		493.57																						
4928C	21-Sep-98		510.16																						
4928C	30-Mar-99		510.22																						
4928C	25-Aug-99		494.57																						
4928C	10-Mar-00		476.92																						
4928C	09-Oct-00		483.18																						
4928C	29-Mar-01	823.37	488.11	6.88	76.8	954	45	472	897	7.31	114	27.7	35.7	5.9	<1	372	54	33	24	<0.1	0.2	561	<5.0		
4928C	25-Sep-01		486.62	7.50	70.7	1550	85	920	1560	7.32	190	46.6	43.6	7.1	<1	612	44.6	112	24.8	0.4	0.31	925	<5.0		

NM = Not measured

LAW/CRANDALL

003418

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JO 3111 354 D. 10/1-d F.T. _____ JR. _____ C.E. _____ CHKD KF

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928C	20-Feb-95																			
4928C	24-Aug-95																			
4928C	23-Feb-96																			
4928C	23-Aug-96																			
4928C	14-Feb-97																			
4928C	26-Aug-97																			
4928C	12-Mar-98																			
4928C	21-Sep-98																			
4928C	30-Mar-99																			
4928C	25-Aug-99																			
4928C	10-Mar-00																			
4928C	09-Oct-00																			
4928C	29-Mar-01	<0.25	2.9	0.8	<0.25	<0.25	0.07[J]			<0.005	<0.01	<0.01	2.44		0.03	<0.05	<0.01		0.39	AETL
4928C	25-Sep-01	0.4[J]	5.4	<0.25	<0.25	<0.25	0.08[J]			<0.01	0.02[J]	<0.01	0.4		<0.005	<0.05	<0.01		0.19	AETL

NM = Not measured

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003419

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APPENDIX B

GROUNDWATER CONTOUR MAP

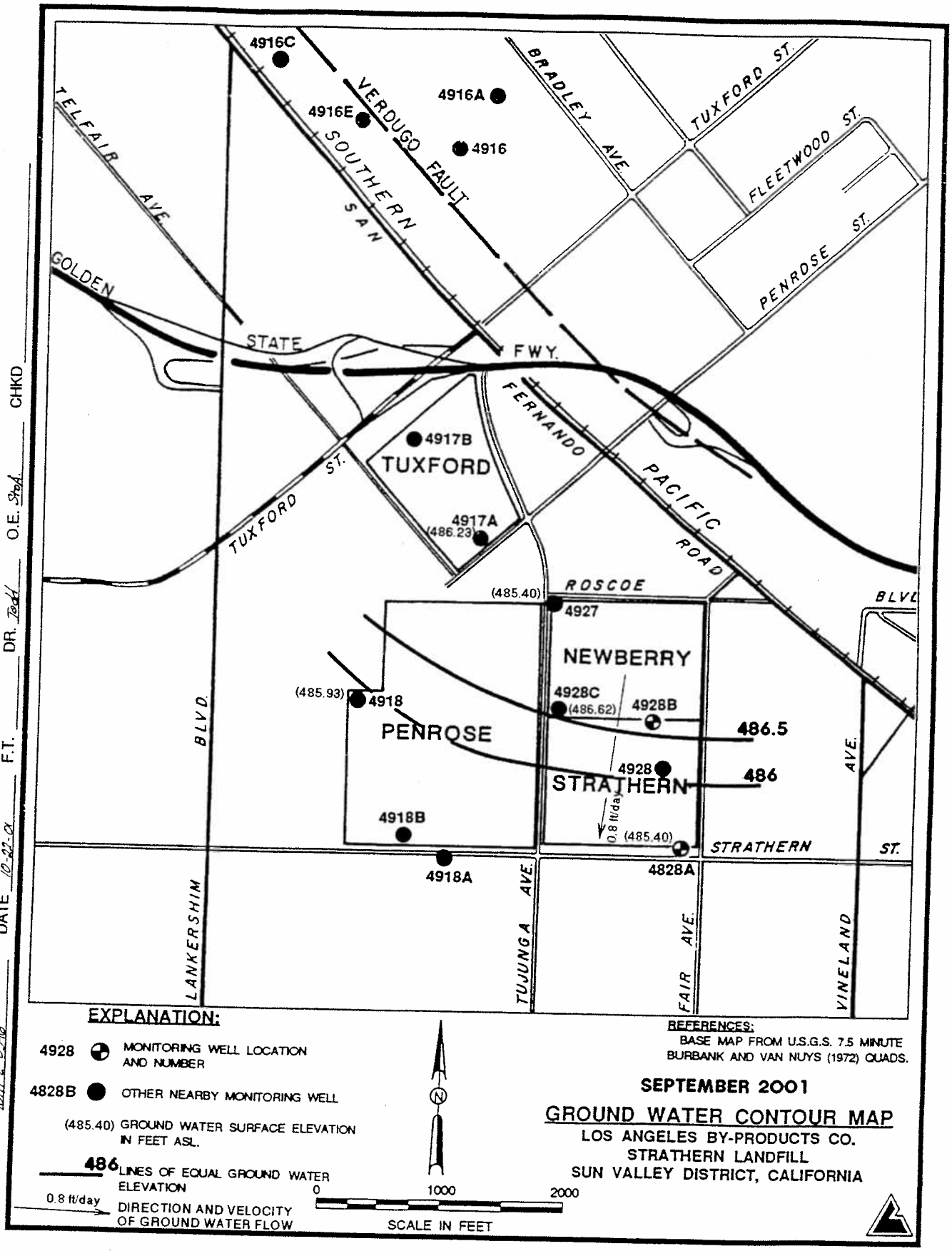
4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
PACIFIC ROAD
4917B
TUXFORD
4917A
(486.23)
TUXFORD ST.
(485.40)
ROSCOE BLVD.
4927
NEWBERRY
(485.93)
4918
4928C
(486.62)
4928B
486.5
PENROSE
4928
STRATHERN
486
0.8 ft/day
4918B
(485.40)
STRATHERN ST.
4828A
4918A
LANKERSHIM BLVD.
TUJUNGA AVE.
FAIR AVE.
VINELAND AVE.
CHKD
O.E. Stad.
DR. Stad
F.T.
DATE 12-22-01
JOB 2011-2-0346
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
(485.40) GROUND WATER SURFACE ELEVATION IN FEET ASL.
486 LINES OF EQUAL GROUND WATER ELEVATION
0.8 ft/day DIRECTION AND VELOCITY OF GROUND WATER FLOW
N
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
SEPTEMBER 2001
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

FIGURE 1

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be triple rinsed from current well water before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Up-gradient wells shall be sampled first, and then the down-gradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s) shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. The chain-of-custody record and other pertinent forms shall accompany all packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 13
Date Received 09/25/2001
Date Reported 10/18/2001

Job Number	Order Date	Client
19931	09/25/2001	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern
Sun Valley, CA

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Gary Mallk Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003426

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

CHAIN OF CUSTODY RECORD

COMPANY: Law Crandall | PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Braitis | FAX: 323-721-6760
PROJECT NAME: Strathern | PROJECT #: 70111-2-0341
SITE NAME AND ADDRESS: Strathern, Sun Valley, CA

AETL JOB No. 1993 | Page 1 of 1

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	4928A	AE104181	9-25-01	1215	water	various	—
2	4928C	AE104182	9-25-01	1315	↓	↓	—
3	Trip Blank	AE104183	9-25-01		↓	↓	—

ANALYSIS REQUESTED

	Boron, COD	524.2	General Minerals	Pb, Ni, Cd
1	X	X	X	X
2	X	X	X	X
3		X		

TEST INSTRUCTIONS & COMMENTS
- metals added 09/25 16:00

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	11	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☑ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Abar	Signature:	Signature:
Printed Name: Sto Abar	Printed Name:	Printed Name:
Date: 1-25-01 Time: 1405	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name: BCASAZAR
Date: Time	Date: Time	Date: 9/25/01 Time: 1415

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

0034627

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Ordered By

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Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10082001 / 10082001

Our Lab I.D.				AE104181	AE104182	AE104183	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			09/25/2001	09/25/2001	09/25/2001	09/25/2001	
Date Prepared			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Benzene	0.25	0.50	ND	ND	ND	ND	
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND	ND	
Bromochloromethane	0.25	0.50	ND	ND	ND	ND	
Bromodichloromethane	0.25	0.50	ND	ND	ND	ND	
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND	ND	
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND	ND	
n-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
sec-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
tert-Butylbenzene	0.25	0.50	ND	ND	ND	ND	
Carbon tetrachloride	0.25	0.50	ND	ND	ND	ND	
Chlorobenzene	0.25	0.50	ND	ND	ND	ND	
Chloroethane	0.25	0.50	ND	ND	ND	ND	
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND	ND	
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND	ND	
2-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
4-Chlorotoluene	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND	ND	
Dibromochloromethane	0.25	0.50	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND	ND	
Dibromomethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND	ND	
Dichlorodifluoromethane	0.25	0.50	ND	ND	ND	ND	
1,1-Dichloroethane	0.25	0.50	ND	1.3	0.5	ND	
1,2-Dichloroethane (EDC)	0.25	0.50	ND	3.0	ND	ND	

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10082001 / 10082001

Our Lab I.D.				AE104181	AE104182	AE104183	
Client Sample I.D.			Method Blank	4928A	4928C	Trip Blank	
Date Sampled			09/25/2001	09/25/2001	09/25/2001	09/25/2001	
Date Prepared			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Preparation Method			5035	5035	5035	5035	
Date Analyzed			10/08/2001	10/08/2001	10/08/2001	10/08/2001	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,1-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
cis-1,2-Dichloroethene	0.25	0.50	ND	0.5	ND	ND	
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND	ND	
1,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,3-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
2,2-Dichloropropane	0.25	0.50	ND	ND	ND	ND	
1,1-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND	ND	
Ethylbenzene	0.25	0.50	ND	ND	ND	ND	
Hexachlorobutadiene	0.25	0.50	ND	ND	ND	ND	
Isopropylbenzene	0.25	0.50	ND	ND	ND	ND	
p-Isopropyltoluene	0.25	0.50	ND	ND	ND	ND	
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND	ND	
Naphthalene	0.5	1.0	ND	ND	ND	ND	
n-Propylbenzene	0.25	0.50	ND	ND	ND	ND	
Styrene	0.25	0.50	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
Tetrachloroethene	0.25	0.50	ND	6.9	5.4	ND	
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND	ND	
Trichloroethene	0.25	0.50	ND	0.9	0.4J	ND	
Trichlorofluoromethane	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND	ND	
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND	ND	
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND	ND	
o-xylene	0.25	0.50	ND	ND	ND	ND	
m,p-Xylenes	0.5	1.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE104181	AE104182	AE104183	
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.	% Rec.	
Bromofluorobenzene	75-125		82	84	79	84	
1,2-Dichlorobenzene	75-125		75	79	74	72	

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ANALYTICAL RESULTS

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Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QC Batch Number: 09262001 / 09262001

Our Lab I.D.				AE104181	AE104182		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			09/25/2001	09/25/2001	09/25/2001		
Date Prepared			09/26/2001	09/26/2001	09/26/2001		
Preparation Method			3005A	3005A	3005A		
Date Analyzed			09/28/2001	09/28/2001	09/28/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Cadmium	0.01	0.05	ND	ND	ND		
Chromium	0.01	0.05	ND	0.01J	0.02J		
Lead	0.05	0.10	ND	ND	ND		
Nickel	0.01	0.05	ND	ND	ND		

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Page 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Analytes			Chemical Oxygen Demand	Boron		
Methods of Analyses			410.4	SM-4500B		
Date Prepared			10/01/2001	10/02/2001		
Date Analyzed			10/01/2001	10/02/2001		
Matrix			Aqueous	Aqueous		
QC Batch Number			10012001 / 10012001	10022001 / 10022001		
Units			mg/L	mg/L		
Detection Limit			5.0	0.1		
Practical Quantitation Limit			10.0	0.2		
Dilution Factor			1	1		
Lab ID	**Sample ID**	**Sampled**	**Results**	**Results**		
AE104181	4928A	09/25/2001	ND	0.4		
AE104182	4928C	09/25/2001	ND	0.4		
N/A	Method Blank	09/25/2001	ND	ND		

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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 09252001 / 09252001

Our Lab I.D.				AE104181	AE104182		
Client Sample I.D.			Method Blank	4928A	4928C		
Date Sampled			09/25/2001	09/25/2001	09/25/2001		
Date Prepared			09/25/2001	09/25/2001	09/25/2001		
Preparation Method			Various	Various	Various		
Date Analyzed			09/25/2001	09/25/2001	09/25/2001		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bicarbonate (as CaCO3)	1	2	ND	288	612		
Carbonate (as CaCO3)	1	2	ND	ND	ND		
Hydroxide (as CaCO3)	1	2	ND	ND	ND		
Total Alkalinity	1	2	ND	288	612		
Anions Total (meq/L)	0.01	0.01	ND	8.57	16.7		
Cations Total (meq/L)	0.01	0.01	ND	7.91	15.5		
Ion Balance (percent difference)	0.01	0.01	ND	4.00	3.73		
Nitrate (Total)	0.4	0.4	ND	31.44	24.8		
Chloride (Cl), Total	0.5	1.0	ND	35	112		
Conductivity (umhos/cm @77F)	5	10	ND	817	1,560		
Fluoride, Total	0.1	0.2	ND	0.35	0.31		
Hardness (Ca,Mg) as CaCO3	1	2	ND	356	720		
Nitrite as Nitrogen	0.01	0.02	ND	ND	ND		
pH (pH units)	0.01	0.01	NA	7.31	7.32		
Sulfate	5	10	ND	62.4	44.6		
Surfactants (MBAS)	0.03	0.05	ND	ND	ND		
Total Dissolved Solids	5	10	ND	501	925		
Aluminum	0.05	0.10	ND	0.11	0.08J		
Calcium	0.25	0.50	ND	89.6	190		
Copper	0.01	0.02	ND	0.02	ND		
Iron	0.03	0.05	ND	0.23	0.40		
Magnesium	0.25	0.50	ND	23.2	46.6		
Manganese	0.005	0.010	ND	ND	ND		
Potassium	0.5	1.0	ND	5.3	7.1		
Sodium	0.25	0.50	ND	31.2	43.6		
Zinc	0.01	0.03	ND	0.44	0.19		

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 10012001 / 10012001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	51.00	102	50.00	50.50	101	<1	80-120	<15	

QC Batch Number: 10012001 / 10012001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	50.00	52.50	105	80-120		

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 10082001 / 10082001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	27.50	110	25.00	28.50	114	3.6	75-125	<20	
Chlorobenzene	25.00	24.50	98	25.00	25.25	101	3.0	75-125	<20	
1,1-Dichloroethene	25.00	24.50	98	25.00	24.00	96	2.1	75-125	<20	
Toluene (Methyl benzene)	25.00	24.00	96	25.00	27.50	110	13.6	75-125	<20	
LCS										
Chloroform (Trichloromethane)	25.00	24.50	98	25.00	21.75	87	11.9	75-125	<20	
Ethylbenzene	25.00	24.25	97	25.00	26.00	104	7.0	75-125	<20	
1,1,1-Trichloroethane	25.00	22.00	88	25.00	20.50	82	7.1	75-125	<20	
Trichloroethene	25.00	25.00	100	25.00	24.25	97	3.0	75-125	<20	
o-Xylene	25.00	25.25	101	25.00	25.25	101	<1	75-125	<20	
m,p-Xylenes	25.00	25.00	100	25.00	26.00	104	3.9	75-125	<20	

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Page: **10**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 09262001 / 09262001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	1.04	104	1.00	1.04	104	<1	80-120	<15	
Chromium	1.00	1.09	109	1.00	1.09	109	<1	80-120	<15	
Lead	1.00	0.99	99	1.00	0.99	99	<1	80-120	<15	
Nickel	1.00	1.09	109	1.00	1.09	109	<1	80-120	<15	

QC Batch Number: 09262001 / 09262001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	1.05	105	80-120						
Chromium	1.00	1.10	110	80-120						
Lead	1.00	1.03	103	80-120						
Nickel	1.00	1.10	110	80-120						

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Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 09252001 / 09252001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Total Alkalinity	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Nitrate (Total)	0.50	0.47	93	0.50	0.46	91	2.1	80-120	<15	
Chloride (Cl), Total	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Fluoride, Total	2.00	2.08	104	2.00	2.06	103	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Nitrite as Nitrogen	0.20	0.19	96	0.20	0.19	95	1.0	80-120	<15	
Sulfate	20.00	19.60	98	20.00	19.60	98	<1	80-120	<15	
Surfactants (MBAS)	0.20	0.20	98	0.20	0.19	93	5.2	80-120	<15	
Aluminum	1.00	1.04	104	1.00	1.05	105	<1	80-120	<15	
Calcium	20.00	20.40	102	20.00	20.40	102	<1	80-120	<15	
Copper	1.00	1.07	107	1.00	1.07	107	<1	80-120	<15	
Iron	1.00	1.06	106	1.00	1.06	106	<1	80-120	<15	
Magnesium	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Manganese	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Potassium	10.00	9.50	95	10.00	9.30	93	2.1	80-120	<15	
Sodium	20.00	19.80	99	20.00	19.80	99	<1	80-120	<15	
Zinc	1.00	1.05	105	1.00	1.05	105	<1	80-120	<15	

QC Batch Number: 09252001 / 09252001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Total Alkalinity	20.00	20.00	100	80-120						
Nitrate (Total)	0.50	0.45	90	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	139.89	99	80-120						
Fluoride, Total	2.00	1.96	98	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
Nitrite as Nitrogen	0.20	0.19	94	80-120						

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
19931	09/25/2001	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 09252001 / 09252001

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
pH (pH units)	7.00	7.00	100	80-120						
Sulfate	20.00	20.00	100	80-120						
Surfactants (MBAS)	0.20	0.19	95	80-120						
Total Dissolved Solids	100.00	93.00	93	80-120						
Aluminum	1.00	1.07	107	80-120						
Calcium	1.00	1.02	102	80-120						
Copper	1.00	1.08	108	80-120						
Iron	1.00	1.07	107	80-120						
Magnesium	1.00	1.10	110	80-120						
Manganese	1.00	1.05	105	80-120						
Potassium	10.00	9.30	93	80-120						
Sodium	1.00	1.09	109	80-120						
Zinc	1.00	1.06	106	80-120						

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern
Sun Valley, CA

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: **13**
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
19931	09/25/2001	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 10022001 / 10022001

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.50	100	0.50	0.52	103	2.9	80-120	<15	

QC Batch Number: 10022001 / 10022001

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.4	0.4	<1	<15	0.50	0.46	91	80-120		

003489

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LAWGIBB GROUP

2000 ANNUAL REPORT
GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

Law/Crandall Project 70111-2-0346

January 31, 2001

003440

CONFIDENTIAL

LAW Crandall
LAWGIBB Group Member

January 31, 2001

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **2000 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 2000 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells fell about 15 feet between the third quarter 1999 and first quarter 2000 due to low precipitation during the fall and early winter months. Between the first and third quarters 2000, groundwater levels rose approximately 6 feet due to precipitation received during the latter winter and spring months. Due to an overall decrease in regional groundwater levels over the past year, upgradient well 4928B was dry during the first and third quarter monitoring events. In well 4928A, inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS). Organic groundwater quality in well 4928A met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE). However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

A Division of LAW Engineering and Environmental Services, Inc.
200 Citadel Drive • Los Angeles, CA 90040-1554
323-889-5300 • Fax: 323-721-6700

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels; collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 2000 groundwater-monitoring program. Law/Crandall collected groundwater samples in March and October of 2000 and prepared this report.

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American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 2000 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March and October 2000. Groundwater levels fell about 15 feet between the third quarter 1999 and first quarter 2000. Between March and October 2000, groundwater levels increased six feet in the monitoring wells. During the first and third quarter 2000 well 4928A was dry. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We were not able to contour the groundwater levels for March and August 2000.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A for the first quarter on March 10, 2000 and for the third quarter on October 9, 2000. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic

compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from AETL of groundwater samples collected in 2000. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 2000, the groundwater met California Drinking Water Standards for most constituents. However, levels of total dissolved solids (TDS) exceeded drinking water limits. Table 2 shows selected 2000 results compared to California Drinking Water Standards.

We believe TDS may be related to changes in groundwater levels. Since 1999/2000 precipitation levels have fell compared to 1998/1999, water levels have decreased significantly. Trends in TDS levels have shown to be lower when water elevations are down. Historically at the site, increases in TDS levels appear to coincide with higher water levels. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels remained constant, dissolved solids have consistent levels between the third quarter 1998 and first quarter 2000. Subsequently, between the first and third quarter 2000, water levels increased approximately six feet and TDS levels decreased but remain above the recommended Maximum Concentration Level (MCL). The different relationship between water levels and TDS during 2000 may be related to a seasonal variation caused by the unusually low precipitation.

Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents. Figure 4 shows a Schoeller plot of inorganic laboratory results from samples collected for only 4928A during March of 2000 and October 2000 for Figure 5. The plot shows inorganics in the groundwater at the downgradient well 4928A site having consistent levels between first and third quarter 2000.

Table 2: Site Water Quality vs. California Drinking Water Standards
2000 Cumulative Data

Constituent	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
		4928A (downgradient)		4928B(upgradient)	
		March	October	March	October
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	509	501	N/A	N/A
Chloride (Cl)	250	36	30	N/A	N/A
Sulfate (SO_4)	250	62	55	N/A	N/A
Nitrate (NO_3)	45	11.7	35.0	N/A	N/A
Iron (Fe)	0.3	0.08	<0.03	N/A	N/A
Manganese (Mn)	0.05	<0.005	<0.005	N/A	N/A
Zinc (Zn)	5	0.20	0.19	N/A	N/A
Organic (µg/L)					
Trichloroethylene (TCE)	5	1.1	0.9	N/A	N/A
Tetrachloroethylene (PCE)	5	6.3	0.38	N/A	N/A
1,2-Dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	N/A	N/A
1,1-Dichloroethane (1,1-DCA)	5	2.4	3.9	N/A	N/A
cis-1,2-Dichloroethene (cis-1,2-DCE)	6	0.6	0.7	N/A	N/A
1,4-Dichlorobenzene (1,4-DCB)	5	<0.5	<0.5	N/A	N/A

[1] *Source: CCR, Title 22, Division 4, Chapter 15*

N/A – Not Available

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Organics

During 2000, trace amounts of trichloroethene (TCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichlorobenezene (1,2-DCB), tetrachloroethene (PCE) and were detected in downgradient monitoring well 4928A. Levels were below California Drinking Water Standards in downgradient well 4928A, except for PCE in well 4928A. Trace amounts of dichlorodifluoromethane were also detected in well 4928A. A primary MCL for dichlorodifluoromethane has currently not been adopted.

No definite pattern has emerged from the volatile organic sampling data. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have fell 16 feet between August 1999 and March 2000 due to low precipitation during the fall and early winter months. Between the first and third quarters 2000, groundwater levels rose approximately 6 feet due to precipitation received during the latter winter and spring months. Due to an overall decrease in regional groundwater levels over the past year, upgradient well 4928B was dry during the first and third quarter monitoring events. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for total dissolved solids (TDS). The different relationship between decreased water levels and TDS during 2000 may be related to a seasonal variation caused by the low rainfall during the year. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5356.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban

Ernesto T. Aban, Jr.
Staff Engineer by cam w/permission

William J. O'Braitis, C.E.G. 2037
Principal Geologist

\70111\92_PROJ\20346\99\0346AR00.DOC/EA:
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

003447

CERTIFICATION AND DECLARATION

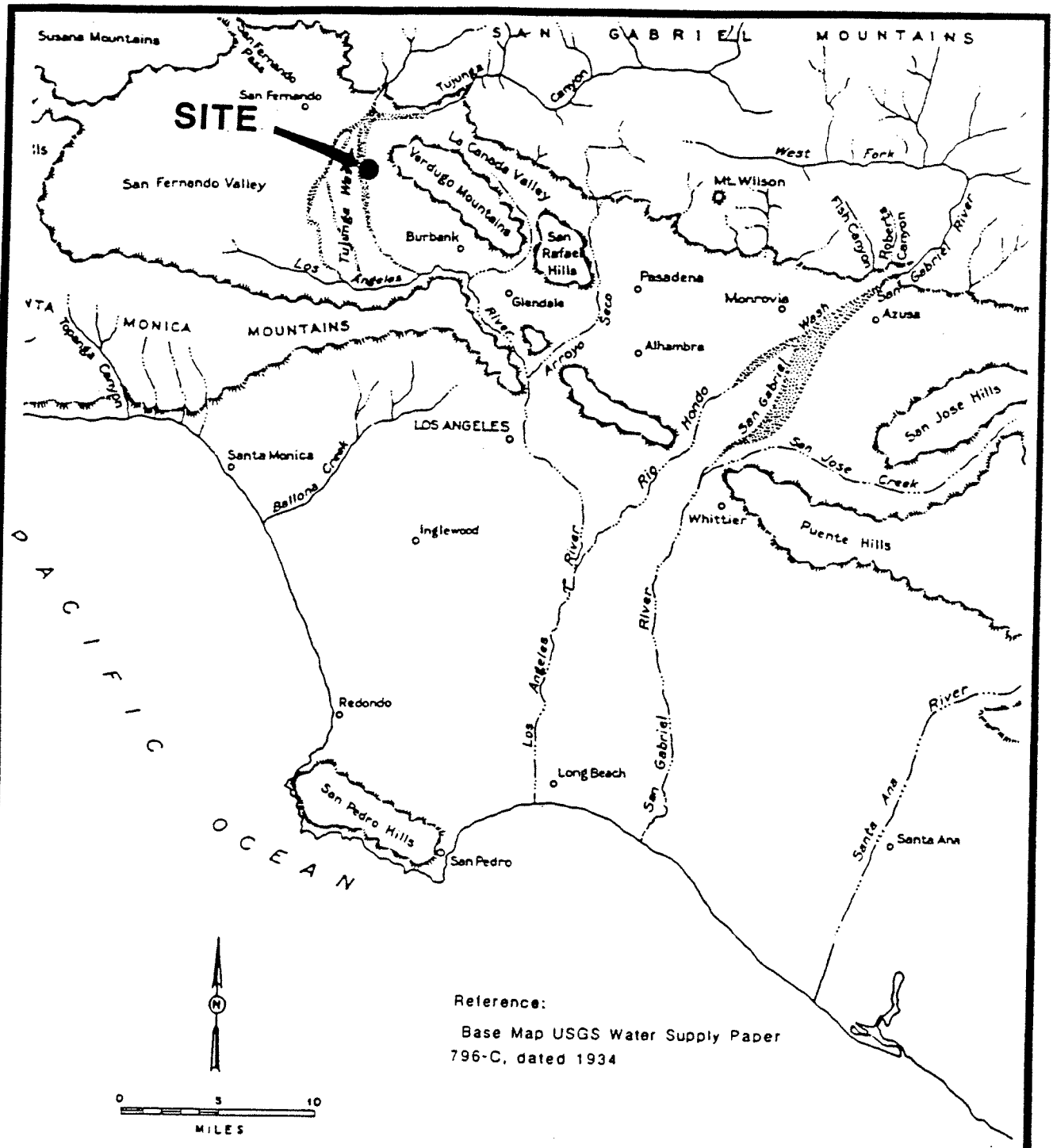
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 31st day of January, 2001, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



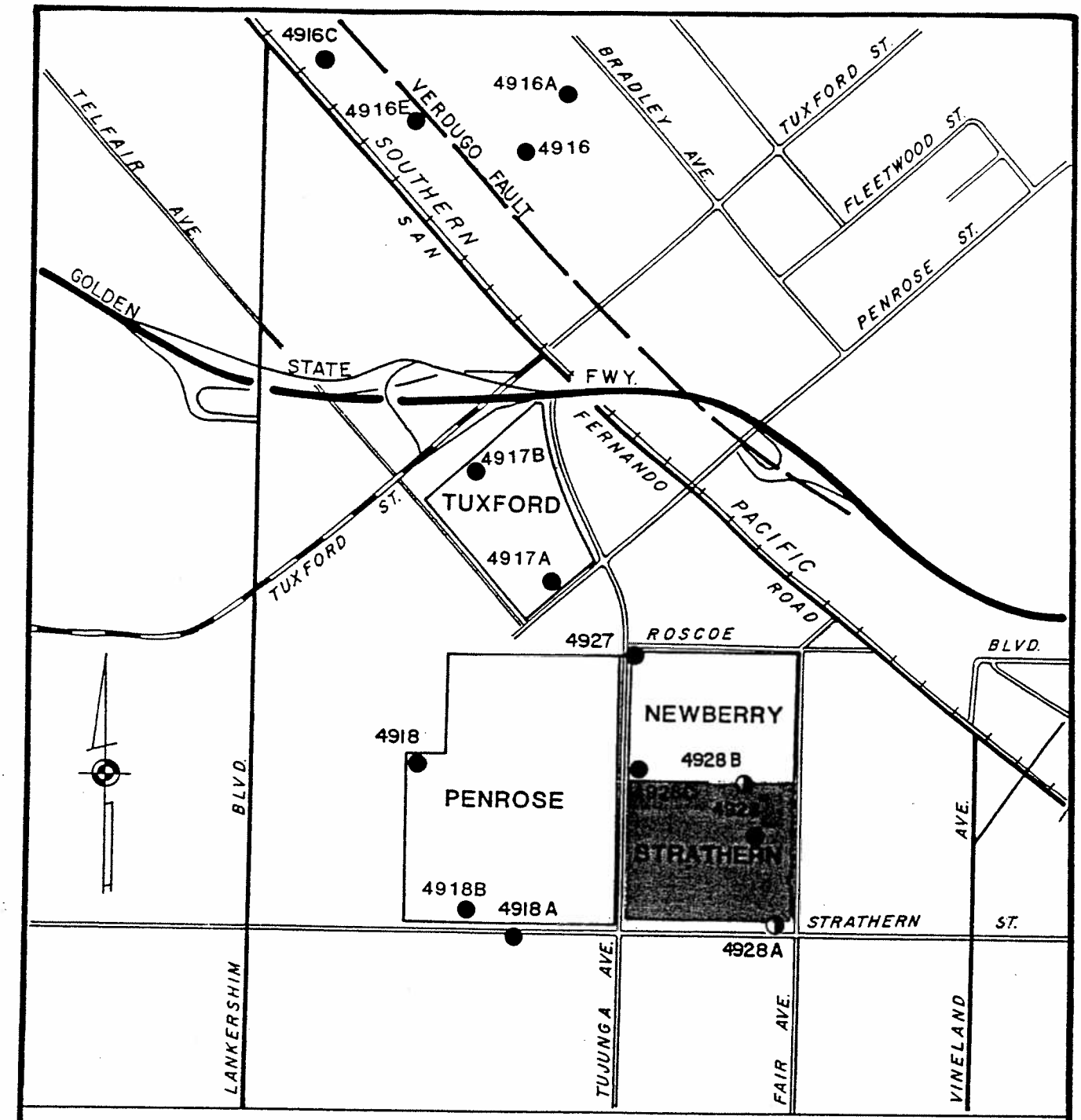
SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003450



EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:

BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000

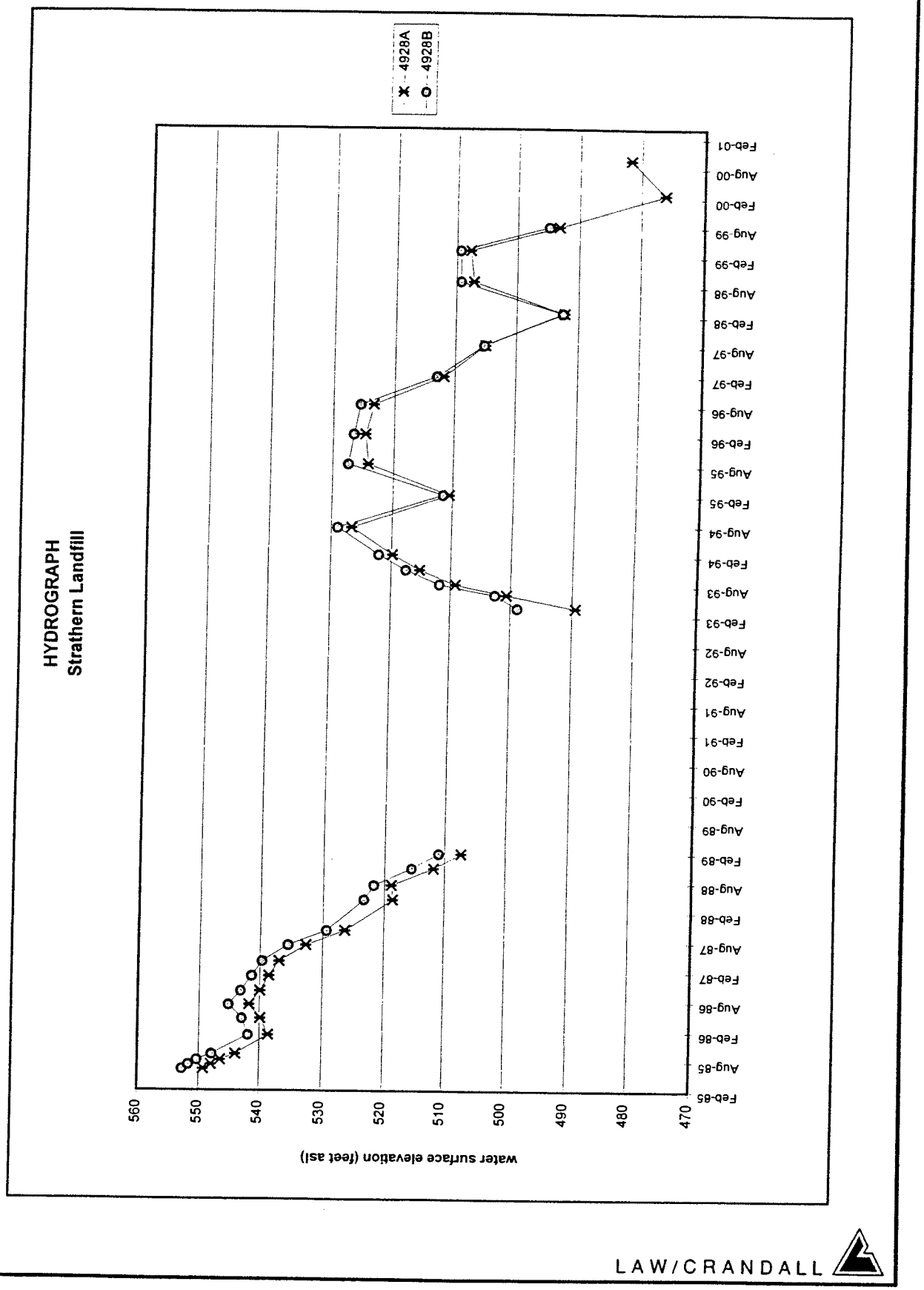
SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY , CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2



LAW/CRANDALL

FIGURE 3

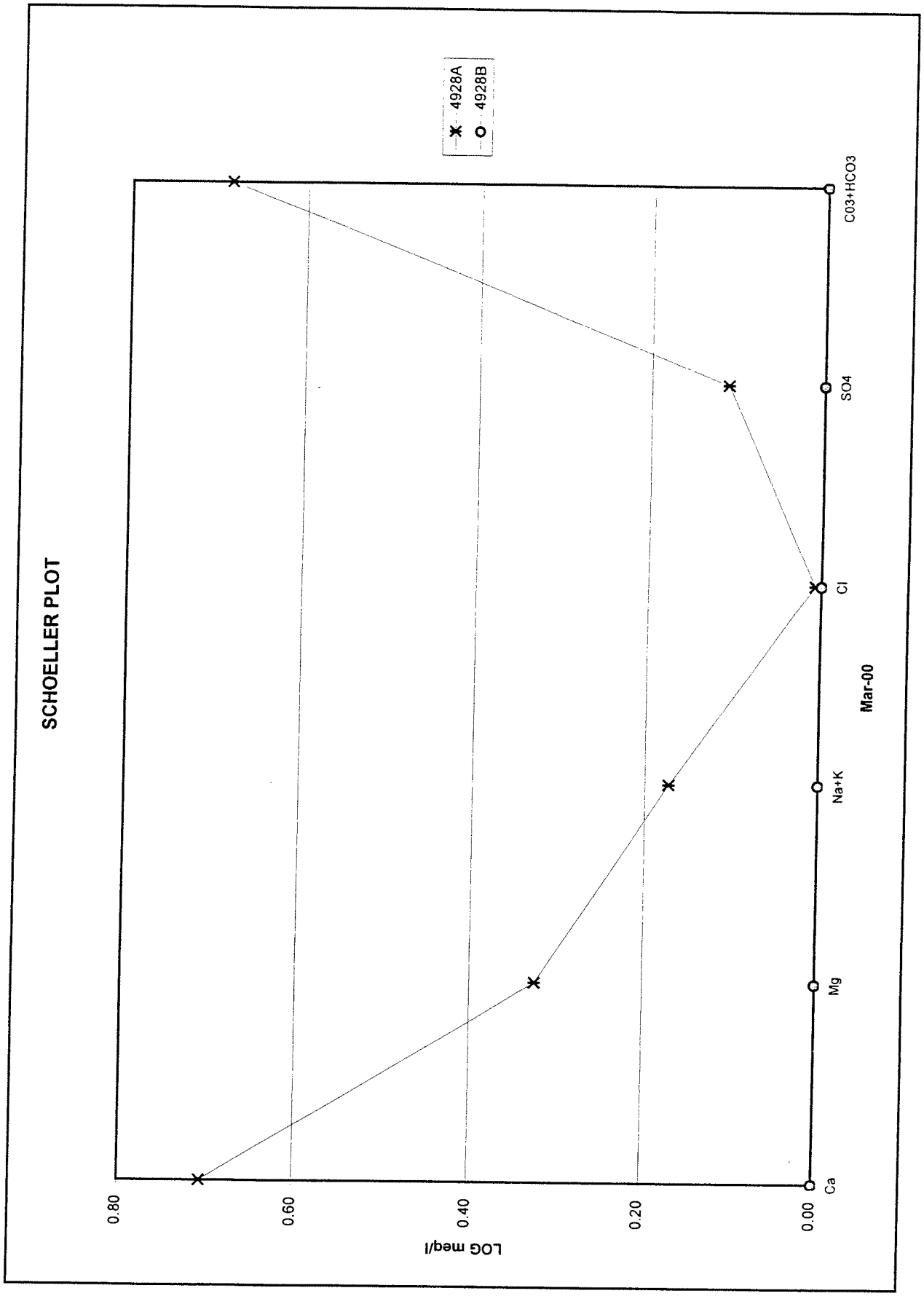

SCHOELLER PLOT
4928A
4928B
LOG meq/l
0.80
0.60
0.40
0.20
0.00
Ca
Mg
Na+K
Cl
SO4
C03+HCO3
Mar-00

Figure 4

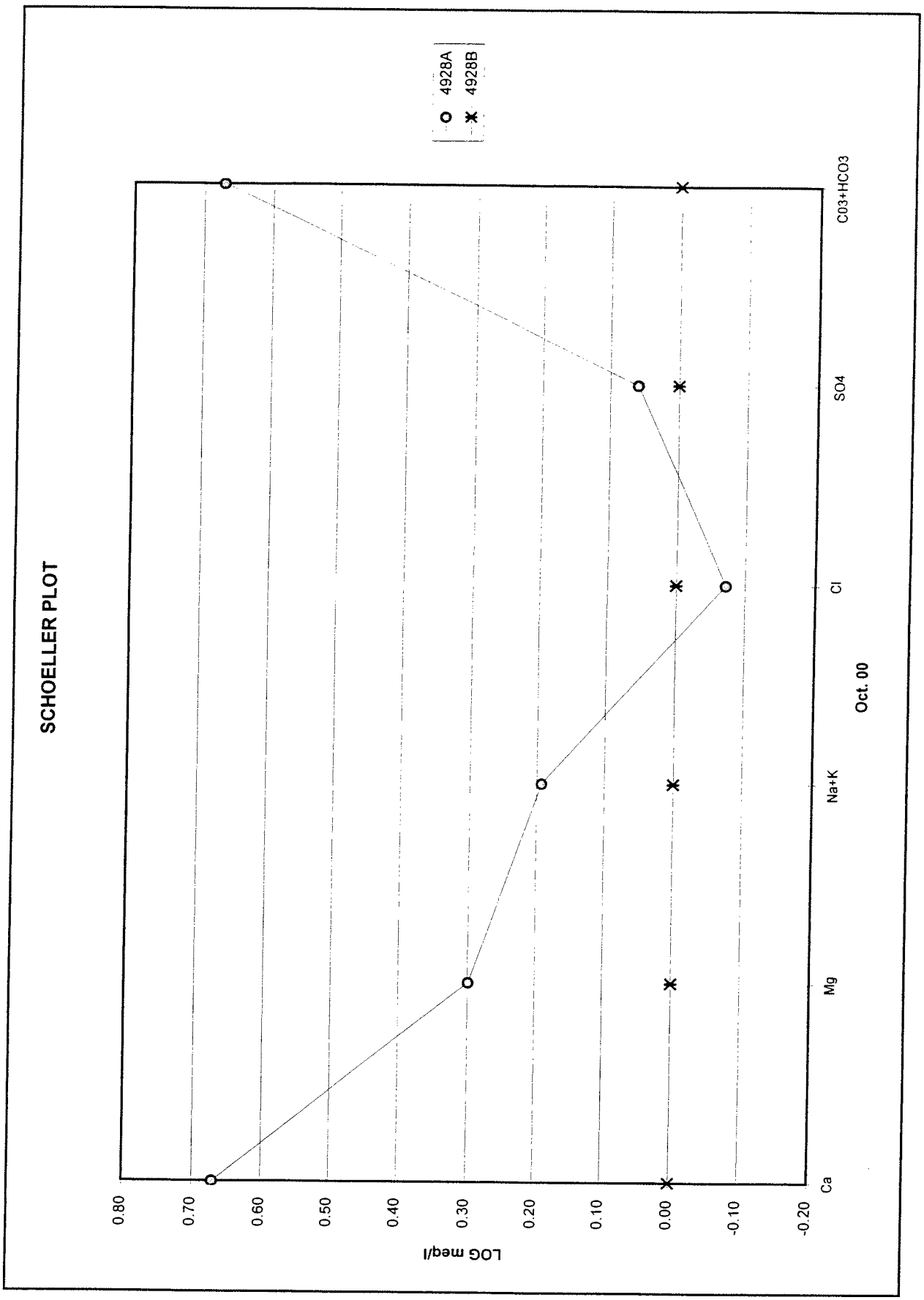
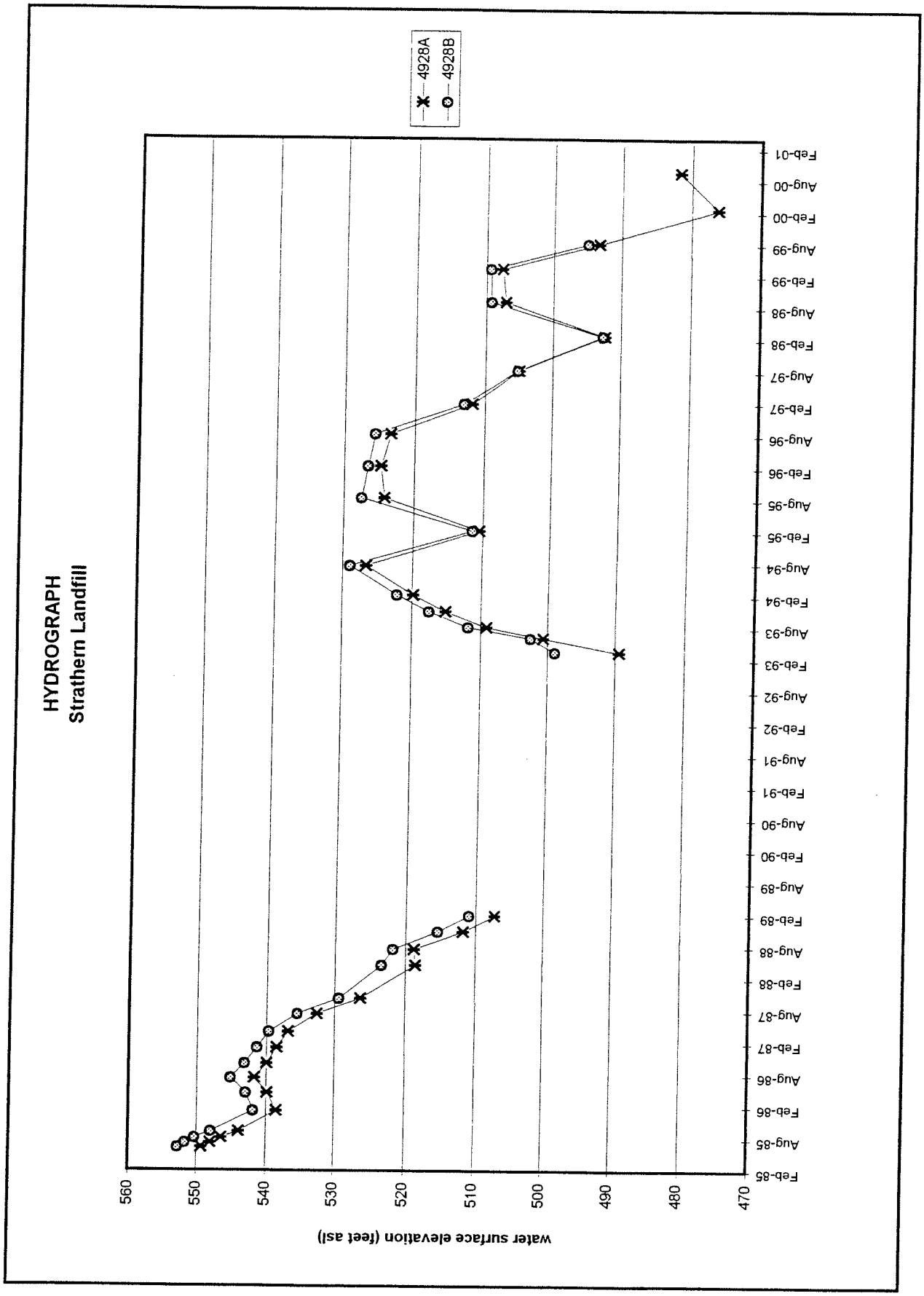

SCHOELLER PLOT
4928A
4928B
LOG meq/l
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
-0.10
-0.20
Ca
Mg
Na+K
Cl
SO4
C03+HCO3
Oct. 00

Figure 5

Figure 6


HYDROGRAPH
Strathern Landfill
4928A
4928B
water surface elevation (feet asl)
560
550
540
530
520
510
500
490
480
470
Feb-85
Aug-85
Feb-86
Aug-86
Feb-87
Aug-87
Feb-88
Aug-88
Feb-89
Aug-89
Feb-90
Aug-90
Feb-91
Aug-91
Feb-92
Aug-92
Feb-93
Aug-93
Feb-94
Aug-94
Feb-95
Aug-95
Feb-96
Aug-96
Feb-97
Aug-97
Feb-98
Aug-98
Feb-99
Aug-99
Feb-00
Aug-00
Feb-01

APPENDIX A

GROUNDWATER DATABASE

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4926A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	69.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4926A	14-Aug-85		546.41	6.6	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.64	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-66		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4926A	15-Oct-66		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.6	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	36	62	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4926A	24-Jul-87	603.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	56	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	62	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	26-Jul-88		516.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.61	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		469.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.6	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	46	16	6.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	6.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	346	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	620	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49						830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	46	5.9	<10	360	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41																						
4926A	11-Sep-96		NM																						
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.61	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4926A	26-Aug-97		504.90	7.0	67	625	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		
4926A	12-Mar-98		492.23	7.3	68	861	36	320	890	7.3	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	785	25		816	7.0	97	24.6	31.2	5.0	<2	356	64	29	22.1	0.4	0.40	528	<6		
4928A	30-Mar-99		507.59	7.6	70	829		378	870	7.3	96	25.2	32.8	4.9	<2.0	324	66	33	38	0.3	0.50	565	<6		
4928A	25-Aug-99		493.23	7.5	67	902	37	372	854	7.0	100	27	35.7	4.5	<2.0	332	64	32	20	0.3	0.40	546	<6		
4928A	10-Mar-00		476.16	7.3	64	528	35	340	800	7.1	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2	0.40	509	22		
4928A	09-Oct-00		481.63	6.8	67	800	30	372	790	6.8	94	24.2	32.6	5.5	<1	286	55	30	35.0	0.2	0.40	501	<5		

NM = Not measured

LAW/CRANDALL

003457

CONFIDENTIAL

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	0.5	8	0.5	1.0	0.05	0.05	0.005	0.05	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.870	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.280				0.800	B&C
4928A	18-Jan-88	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-88	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-88	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-88	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.580	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.8	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.8	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.080	0.027	<0.04		1.5	B&C
4928A	23-Aug-98																			
4928A	11-Sep-96																			
4928A	31-Oct-98	0.58	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	28-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.8	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.5	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.2	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.0	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL
4928A	10-Mar-00	1.1	8.3	<0.25	<0.25	<0.25	0.3			<0.005	<0.01	0.06	0.08		<0.005	<0.05	<0.01		0.20	AETL
4928A	09-Oct-00	0.9	3.8	<0.25	<0.25	<0.25	0.08[J]			<0.005	0.02	<0.01	<0.03		<0.005	<0.05	<0.01		0.19	AETL

NM = Not measured

LAW/CRANDALL

003458

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JOB _____ DATE _____ F.I. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)					
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	62	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	360	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	260	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	16	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	6.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	660	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.06
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	16	3.2	0.16	0.30	430	<3		<0.06
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	660	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79		68	600	50	266	660	6.5	62	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	36	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		526.93	7.0	66	950		528	1000	6.6	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000		NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	560	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75	620	35	546	1400	6.6	190	54	52	6.5	<10	690	76	77	5.7	0.53	1.1	860	32.0		
4928B	23-Aug-96		525.61																						
4928B	11-Sep-96		NM	7.0	71	1000		595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	580	15		
4928B	26-Aug-97		505.13	7.1	72	1120	86	560	1000	6.6	150	41	45	6.4	0	600	46	36	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	74	1152		502	1110	7.0	97	35	61	9	<2.0	502	40	56	<0.1	0.5	0.2	602	<10		
4928B	21-Sep-98		509.2	7.3	70	835			1020	7.1	72	22	101	7.2	<2.0	436	57	39	6.2	0.3	0.3	616	<6		
4928B	30-Mar-99		509.34	6.9	73	1381		532	1310	7.13	154	<0.05	43.6	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<6.0		
4928B	25-Aug-99	461.09	494.85	7.1	76	1240		628	1180	6.86	116	34	46	4.8	<2.0	546	67	40	6.6	0.3	0.3	754	<6.0		
4928B	10-Mar-00		DRY																						
4928B	09-Oct-00		DRY																						

NM = Not measured

LAW/CRANDALL

003453

CONFIDENTIAL

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.08		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.048		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-88	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-88	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.08	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.087	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-98	1.3	2.8	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0078	<0.04		2.3	B&C
4928B	23-Aug-98																			
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.28	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.8	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.98	AETL
4928B	30-Mar-99	0.8	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL
4928B	10-Mar-00																			
4928B	09-Oct-00																			

NM = Not measured

LAW/CRANDALL

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

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FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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Ordered By

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200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Sto Aban

Number of Pages 12
Date Received 03/10/2000
Date Reported 04/03/2000

Job Number	Order Date	Client
14859	03/10/2000	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Sun Valley

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joel Sevilla Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 14859 PAGE ___ OF ___

CHAIN OF CUSTODY RECORD

CLIENT: LAW/CRANDALL TELEPHONE: (323) 8895300
FAX: (323) 724-6700
ADDRESS: 200 N. Citadel DR LA CA 90040
SITE: SUN VALLEY
CONTACT PERSON: Sto ABAN PROJECT NAME: STRATHROW PROJECT NUMBER: 7011-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: GENERAL MINERALS	BORON	COD	524.2	Cd Cr N. Pb	REMARKS
4928A	AE70724	3/10/00	0945	~~VARIOUS~~		X				ICE	X	X	X	X	X	
TRIP BLANK	AE70725	3/10/00		VOA						ICE				X		

Collected By: MIKE EAGEN Date 3/10/00 Time 1200
Relinquished By: [signature] Date 3/10/00 Time 1200
Turn Around Time ☒ Normal ☐ Rush

Delivered By: Date Time
Received For Laboratory CARLOS GONZALEZ Date 3/10/00 Time 12:00

00343300

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Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Our Lab I.D.							AE70724	
Client Sample I.D.						Method Blank	4928A	
Date Sampled						03/10/2000	03/10/2000	
Matrix						Aqueous	Aqueous	
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Cadmium	200.7	mg/L	0.005	0.005	03/30/2000	ND	ND	
Chromium	200.7	mg/L	0.01	0.01	03/30/2000	ND	ND	
Lead	200.7	mg/L	0.05	0.05	03/30/2000	ND	ND	
Nickel	200.7	mg/L	0.01	0.04	03/30/2000	ND	ND	
Chemical Oxygen Demand	410.4	mg/L	5.0	6.0	03/16/2000	ND	22	
Boron	SM-4500B	mg/L	0.1	0.2	03/13/2000	ND	0.2	

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Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03102000 / 03102000

Our Lab I.D.				AE70724			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			03/10/2000	03/10/2000			
Date Prepared			03/10/2000	03/10/2000			
Preparation Method			GEN-MIN.	GEN-MIN.			
Date Analyzed			03/20/2000	03/20/2000			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	296			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	296			
Anions Total (meq/L)	0.01	0.01	ND	9.08			
Cations Total (meq/L)	0.01	0.01	ND	8.71			
Ion Balance (percent difference)	0.01	0.01	ND	- 2.07			
pH (pH units)	0.01	0.01	NA	7.13			
Chloride (Cl), Total	0.5	1.0	ND	36			
Conductivity (umhos/cm @77F)	5	10	ND	802			
Fluoride, Total	0.1	0.2	ND	0.4			
Hardness (Ca,Mg) as CaCO3	1	2	ND	358			
Nitrate as Nitrogen	0.05	0.10	ND	11.7			
Nitrite as Nitrogen	0.01	0.02	ND	ND			
Sulfate	5	10	ND	62			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	509			
Aluminum	0.05	0.10	ND	0.3			
Calcium	0.25	0.50	ND	102			
Copper	0.01	0.02	ND	0.06			
Iron	0.03	0.05	ND	0.08			
Magnesium	0.25	0.50	ND	25.6			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	7.0			
Sodium	0.25	0.50	ND	30.1			
Zinc	0.01	0.03	ND	0.20			

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Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 03232000 / 03232000

Our Lab I.D.				AE70724	AE70725		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			03/10/2000	03/10/2000	03/10/2000		
Date Prepared			03/23/2000	03/23/2000	03/23/2000		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			03/23/2000	03/23/2000	03/23/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	1.2	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	2.0	ND		
1,1-Dichloroethane	0.25	0.50	ND	2.4	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 03232000 / 03232000

Our Lab I.D.				AE70724	AE70725		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			03/10/2000	03/10/2000	03/10/2000		
Date Prepared			03/23/2000	03/23/2000	03/23/2000		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			03/23/2000	03/23/2000	03/23/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.8	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	6.3	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	1.1	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE70724	AE70725		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		95	85	103		
1,2-Dichlorobenzene	75-125		89	84	111		

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Telephone: (323)889-5300
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Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch Number: 03302000 / 03302000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.0	1.0	99	1.0	1.0	98	1.0	80-120	<15	
Chromium	1.0	1.0	100	1.0	1.0	99	1.0	80-120	<15	
Lead	1.0	1.0	103	1.0	1.0	99	4.0	80-120	<15	
Nickel	1.0	1.0	97	1.0	1.0	96	1.0	80-120	<15	

QC Batch Number: 03302000 / 03302000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.0	1.0	102	80-120						
Chromium	1.0	1.0	101	80-120						
Lead	1.0	1.0	99	80-120						
Nickel	1.0	1.0	102	80-120						

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 03162000 / 03162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.0	49.0	98	50.0	48.0	96	2.1	80-120	<15	

QC Batch Number: 03162000 / 03162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	100	100	<1	<15	100.0	97.0	97	80-120		

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 03232000 / 03232000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.0	54.5	109	50.0	48.0	96	12.7	75-125	<20	
Chlorobenzene	50.0	56.5	113	50.0	50.0	100	12.2	75-125	<20	
1,1-Dichloroethene	50.0	49.5	99	50.0	43.0	86	14.1	75-125	<20	
Toluene (Methyl benzene)	50.0	55.5	111	50.0	47.5	95	15.5	75-125	<20	
Trichloroethene	50.0	58.0	116	50.0	50.5	101	13.8	75-125	<20	
LCS										
Chloroform (Trichloromethane)			114			101	12.1	75-125	<20	
Ethylbenzene			113			99	13.2	75-125	<20	
1,1,1-Trichloroethane			120			106	12.4	75-125	<20	
Trichloroethene			116			101	13.8	75-125	<20	
o-Xylene			113			100	12.2	75-125	<20	
m,p-Xylenes			115			100	14.0	75-125	<20	

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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 03102000 / 03102000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Carbonate (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Hydroxide (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Total Alkalinity	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Chloride (Cl), Total	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	1.0	1.0	95	1.0	1.0	100	5.1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Nitrate as Nitrogen	0.5	0.5	99	0.5	0.5	102	3.0	80-120	<15	
Nitrite as Nitrogen	0.2	0.2	103	0.2	0.2	104	<1	80-120	<15	
Sulfate	20.0	19.8	99	20.0	19.8	99	<1	80-120	<15	
Surfactants (MBAS)	0.2	0.2	98	0.2	0.2	96	2.1	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.0	1.1	108	1.0	1.1	110	1.8	80-120	<15	
Calcium	1.0	1.1	107	1.0	1.0	98	8.8	80-120	<15	
Copper	1.0	1.0	98	1.0	1.0	98	<1	80-120	<15	
Iron	1.0	1.0	100	1.0	1.0	100	<1	80-120	<15	
Magnesium	1.0	1.1	107	1.0	1.0	100	6.8	80-120	<15	
Manganese	1.0	0.9	94	1.0	1.0	95	1.1	80-120	<15	
Potassium	1.0	0.9	90	1.0	1.0	98	8.5	80-120	<15	
Sodium	1.0	1.1	105	1.0	1.0	95	10.0	80-120	<15	
Zinc	1.0	1.0	100	1.0	1.0	101	<1	80-120	<15	

QC Batch Number: 03102000 / 03102000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.0	20.0	100	80-120						
Carbonate (as CaCO3)	20.0	20.0	100	80-120						
Hydroxide (as CaCO3)	20.0	20.0	100	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03102000 / 03102000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Total Alkalinity	20.0	20.0	100	80-120						
pH (pH units)	7.0	7.0	100	80-120						
Chloride (Cl), Total	20.0	20.0	100	80-120						
Conductivity (umhos/cm @77F)	141.3	139.9	99	80-120						
Fluoride, Total	1.0	1.0	95	80-120						
Hardness (Ca,Mg) as CaCO3	20.0	20.0	100	80-120						
Nitrate as Nitrogen	0.5	0.5	101	80-120						
Nitrite as Nitrogen	0.2	0.2	104	80-120						
Sulfate	20.0	19.6	98	80-120						
Surfactants (MBAS)	0.2	0.2	103	80-120						
Total Dissolved Solids	100.0	101.0	101	80-120						
Aluminum	1.0	1.1	106	80-120						
Calcium	1.0	1.1	105	80-120						
Copper	1.0	1.0	101	80-120						
Iron	1.0	1.1	105	80-120						
Magnesium	1.0	1.1	105	80-120						
Manganese	1.0	1.0	101	80-120						
Potassium	1.0	1.0	96	80-120						
Sodium	1.0	1.0	99	80-120						
Zinc	1.0	1.0	102	80-120						

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 03132000 / 03132000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.5	0.5	95	0.5	0.5	97	2.1	80-120	<15	

QC Batch Number: 03132000 / 03132000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.3	0.3	<1	<15	0.5	0.5	98	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Number of Pages	**12**
Date Received	**10/09/2000**
Date Reported	**10/17/2000**

Job Number	Order Date	Client
16639	10/09/2000	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Scream Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003479

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CHAIN OF CUSTODY RECORD

COMPANY: LAW CRANDALL
PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Braitis
FAX: 323-721-6700
PROJECT NAME: Strathern
PROJECT #: 7011-2-0346
SITE NAME AND ADDRESS: Strathern Landfill

AETL JOB No. 16639

Page 1 of 1

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	General M. metals	Boron	COD	524.2	Cd, Cr, Ni, Pb						TEST INSTRUCTIONS & COMMENTS
1	4928 A	AE78732	10-9-00	1305	water	various	None	X	X	X	X	X						Filter metals
2	~~4928 B~~		~~10-6-00~~		~~water~~	~~various~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~						~~Filter metals~~
3	Trip Blank	AE78733	10-6-00		water	various					X							
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	10	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N / (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) / N		SAMPLES ACCEPTED (Y) / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Aban	Signature:	Signature:
Printed Name: Sto Aban	Printed Name:	Printed Name:
Date: 10-9-00 Time: 1380	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature: [signature]
Printed Name:	Printed Name:	Printed Name: Alan Gutierrez
Date: Time:	Date: Time:	Date: 10/9/00 Time: 1380

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

Ordered By

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Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

ARTL Job Number	Submitted	Client
16639	10/09/2000	LC

Our Lab I.D.							AR78732	
Client Sample I.D.						Method Blank	4928A	
Date Sampled						10/09/2000	10/09/2000	
Matrix						Aqueous	Aqueous	
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Chemical Oxygen Demand	410.4	mg/L	5.0	6.0	10/16/2000	ND	ND	
Cadmium	6010BSCAN	mg/L	0.005	0.005	10/11/2000	ND	ND	
Chromium	6010BSCAN	mg/L	0.01	0.01	10/11/2000	ND	0.02	
Lead	6010BSCAN	mg/L	0.05	0.05	10/11/2000	ND	ND	
Nickel	6010BSCAN	mg/L	0.01	0.04	10/11/2000	ND	ND	
Boron	SM-4500B	mg/L	0.1	0.2	10/16/2000	ND	0.2	

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ANALYTICAL RESULTS

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Site
Strathern Landfill

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Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10132000 / 10132000

Our Lab I.D.				AE78732	AE78733		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			10/09/2000	10/09/2000	10/06/2000		
Date Prepared			10/13/2000	10/13/2000	10/13/2000		
Preparation Method			5035	5035	5035		
Date Analyzed			10/13/2000	10/13/2000	10/13/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	2.5	ND		
1,1-Dichloroethane	0.25	0.50	ND	3.9	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10132000 / 10132000

Our Lab I.D.				AE78732	AE78733		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			10/09/2000	10/09/2000	10/06/2000		
Date Prepared			10/13/2000	10/13/2000	10/13/2000		
Preparation Method			5035	5035	5035		
Date Analyzed			10/13/2000	10/13/2000	10/13/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.6	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	3.8	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.9	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE78732	AE78733		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		92	86	84		
1,2-Dichlorobenzene	75-125		93	78	88		

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 10092000 / 10092000

Our Lab I.D.				AE78732			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			10/09/2000	10/09/2000			
Date Prepared			10/09/2000	10/09/2000			
Preparation Method			Various	Various			
Date Analyzed			10/16/2000	10/16/2000			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	286			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	286			
Anions Total (meq/L)	0.01	0.01	ND	8.30			
Cations Total (meq/L)	0.01	0.01	ND	8.28			
Ion Balance (percent difference)	0.01	0.01	ND	-0.12			
pH (pH units)	0.01	0.01	ND	6.81			
Chloride (Cl), Total	0.5	1.0	ND	30			
Conductivity (umhos/cm @77F)	5	10	ND	790			
Fluoride, Total	0.1	0.2	ND	0.4			
Hardness (Ca,Mg) as CaCO3	1	2	ND	330			
Nitrate	0.05	0.10	ND	35.0			
Nitrite	0.01	0.02	ND	ND			
Sulfate	5	10	ND	55			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	501			
Aluminum	0.05	0.10	ND	0.08J			
Calcium	0.25	0.50	ND	93.9			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	ND			
Magnesium	0.25	0.50	ND	24.2			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	5.5			
Sodium	0.25	0.50	ND	32.6			
Zinc	0.01	0.03	ND	0.19			

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 10162000 / 10162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.50	99	50.00	48.00	96	3.0	80-120	<15	

QC Batch Number: 10162000 / 10162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	100.00	104.00	104	80-120		

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ANALYTICAL RESULTS

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Site

Strathern Landfill

Telephone: (323)889-5300
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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 10132000 / 10132000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	26.00	104	25.00	26.25	105	<1	75-125	<20	
Chlorobenzene	25.00	23.25	93	25.00	23.50	94	1.1	75-125	<20	
1,1-Dichloroethene	25.00	22.25	89	25.00	23.75	95	6.5	75-125	<20	
Toluene (Methyl benzene)	25.00	21.25	85	25.00	21.50	86	1.2	75-125	<20	
LCS										
Chloroform (Trichloromethane)	25.00	26.25	105	25.00	26.75	107	1.9	75-125	<20	
Ethylbenzene	25.00	22.25	89	25.00	22.25	89	<1	75-125	<20	
1,1,1-Trichloroethane	25.00	21.75	87	25.00	22.25	89	2.3	75-125	<20	
Trichloroethene	25.00	23.75	95	25.00	24.00	96	1.0	75-125	<20	
o-Xylene	25.00	24.00	96	25.00	23.75	95	1.0	75-125	<20	
m,p-Xylenes	25.00	23.00	92	25.00	23.25	93	1.1	75-125	<20	

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 10112000 / 10112000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	0.99	99	1.00	0.98	98	1.0	80-120	<15	
Chromium	1.00	1.00	100	1.00	1.00	100	<1	80-120	<15	
Lead	1.00	1.03	103	1.00	1.02	102	<1	80-120	<15	
Nickel	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15	

QC Batch Number: 10112000 / 10112000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	0.99	99	80-120						
Chromium	1.00	0.99	99	80-120						
Lead	1.00	1.05	105	80-120						
Nickel	1.00	0.98	98	80-120						

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ANALYTICAL RESULTS

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Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 10092000 / 10092000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Carbonate (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Hydroxide (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Total Alkalinity	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Chloride (Cl), Total	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	3.00	2.82	94	3.00	2.82	94	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Nitrate	0.50	0.50	100	0.50	0.49	98	2.0	80-120	<15	
Nitrite	0.20	0.21	104	0.20	0.20	102	1.9	80-120	<15	
Sulfate	20.00	19.60	98	20.00	19.40	97	1.0	80-120	<15	
Surfactants (MBAS)	0.20	0.19	97	0.20	0.19	95	2.0	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.00	1.03	103	1.00	1.05	105	1.9	80-120	<15	
Calcium	1.00	1.04	104	1.00	1.05	105	<1	80-120	<15	
Copper	1.00	1.00	100	1.00	0.99	99	1.0	80-120	<15	
Iron	1.00	1.06	106	1.00	1.07	107	<1	80-120	<15	
Magnesium	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Manganese	1.00	1.00	100	1.00	1.01	101	<1	80-120	<15	
Potassium	10.00	9.90	99	10.00	10.10	101	2.0	80-120	<15	
Sodium	1.00	1.02	102	1.00	1.02	102	<1	80-120	<15	
Zinc	1.00	0.99	99	1.00	0.98	98	1.0	80-120	<15	

QC Batch Number: 10092000 / 10092000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Carbonate (as CaCO3)	20.00	20.00	100	80-120						
Hydroxide (as CaCO3)	20.00	20.00	100	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 10092000 / 10092000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Total Alkalinity	20.00	20.00	100	80-120						
pH (pH units)	7.00	7.00	100	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	139.89	99	80-120						
Fluoride, Total	6.00	6.12	102	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
Nitrate	0.50	0.51	102	80-120						
Nitrite	0.20	0.21	103	80-120						
Sulfate	20.00	19.60	98	80-120						
Surfactants (MBAS)	0.20	0.19	95	80-120						
Total Dissolved Solids	100.00	96.00	96	80-120						
Aluminum	1.00	1.10	110	80-120						
Calcium	1.00	1.01	101	80-120						
Copper	1.00	0.99	99	80-120						
Iron	1.00	1.10	110	80-120						
Magnesium	1.00	1.03	103	80-120						
Manganese	1.00	0.96	96	80-120						
Potassium	10.00	9.10	91	80-120						
Sodium	1.00	1.02	102	80-120						
Zinc	1.00	0.98	98	80-120						

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 10162000 / 10162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.51	102	0.50	0.52	103	<1	80-120	<15	

QC Batch Number: 10162000 / 10162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.2	0.2	<1	<15	0.50	0.51	102	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

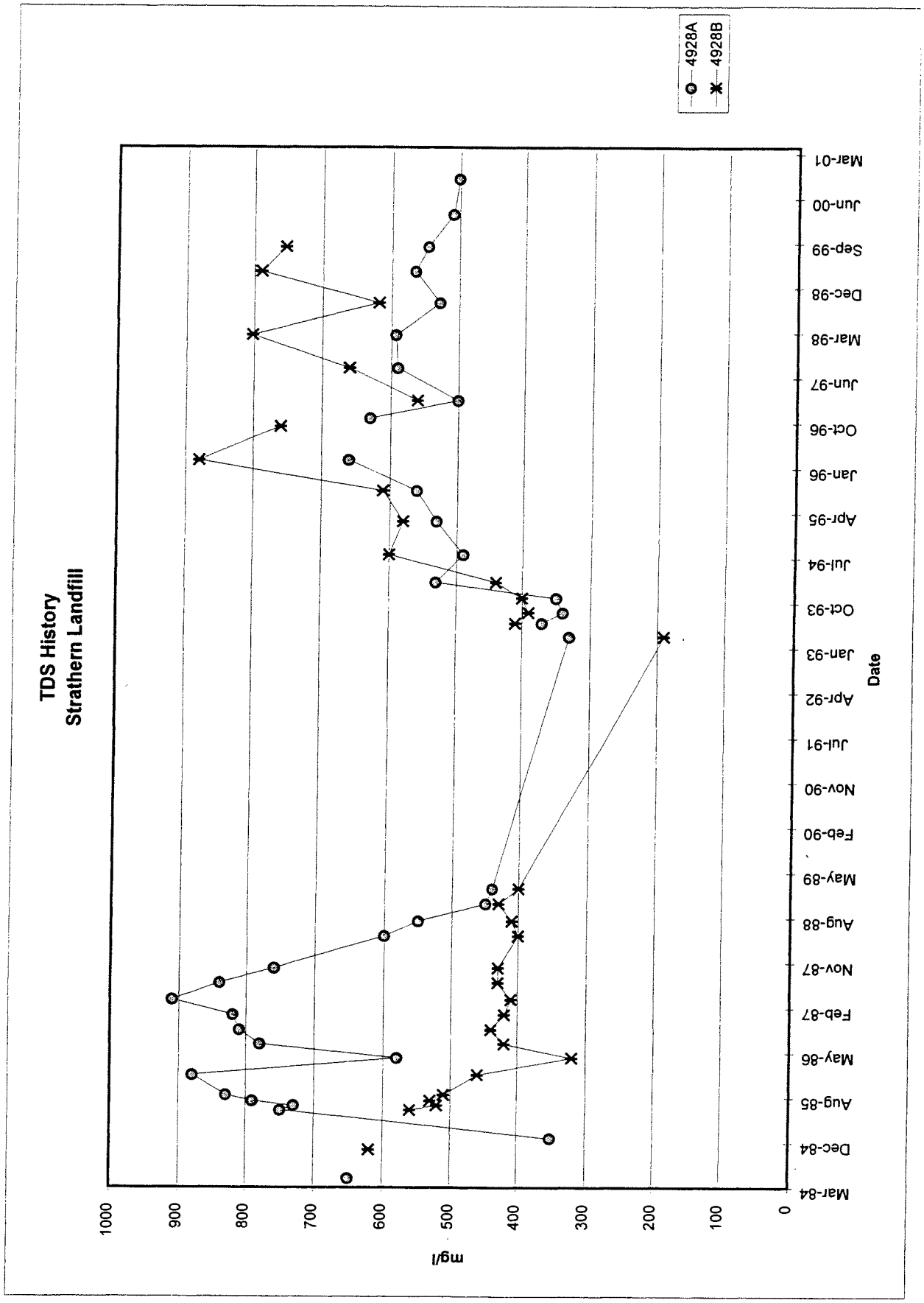
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

APPENDIX D

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS


TDS History
Strathern Landfill
4928A
4928B
mg/l
1000
900
800
700
600
500
400
300
200
100
0
Date
Mar-84
Dec-84
Aug-85
May-86
Feb-87
Nov-87
Aug-88
May-89
Feb-90
Nov-90
Jul-91
Apr-92
Jan-93
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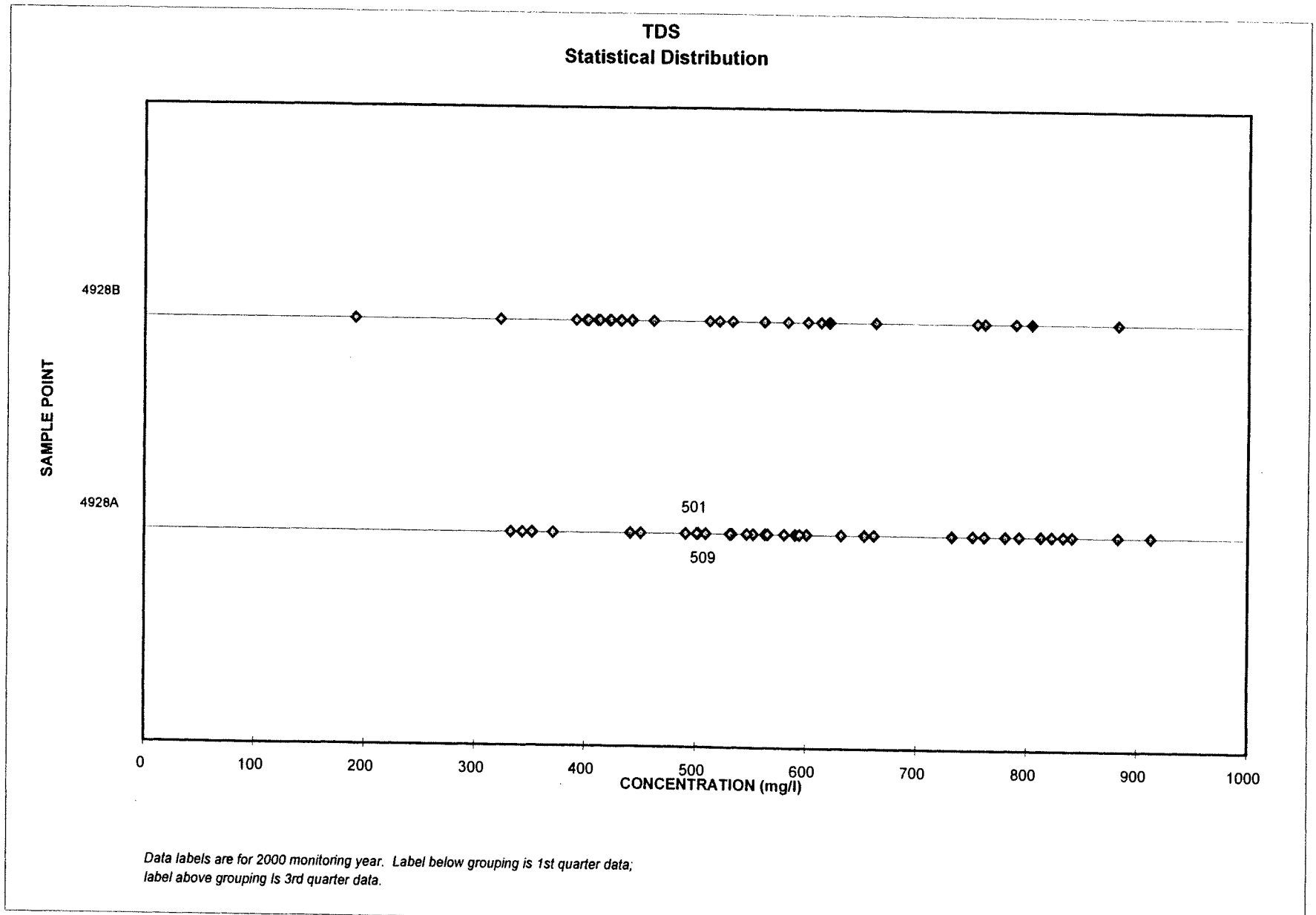
Dec-98
Sep-99
Jun-00
Mar-01



Data labels are for 2000 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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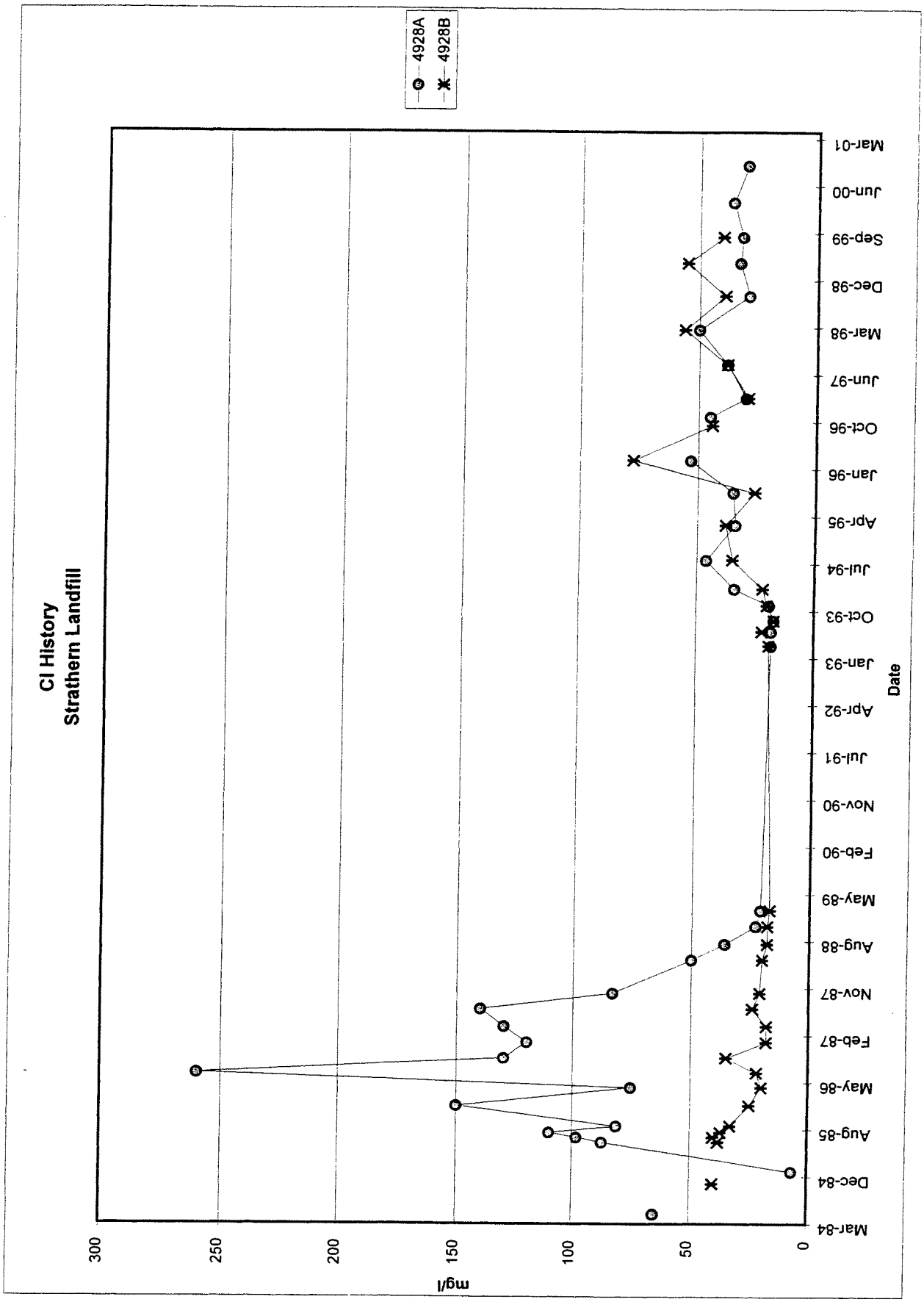
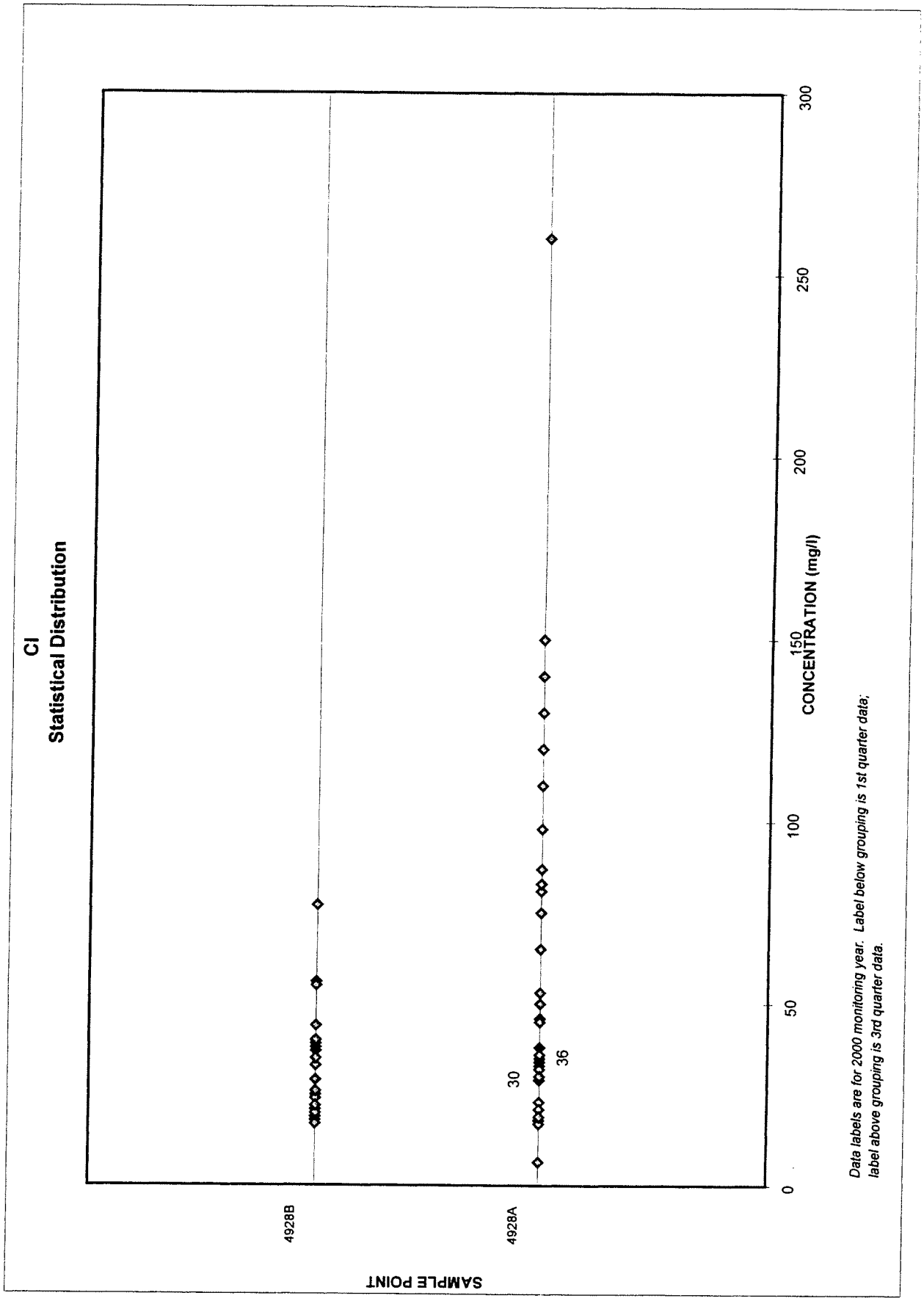
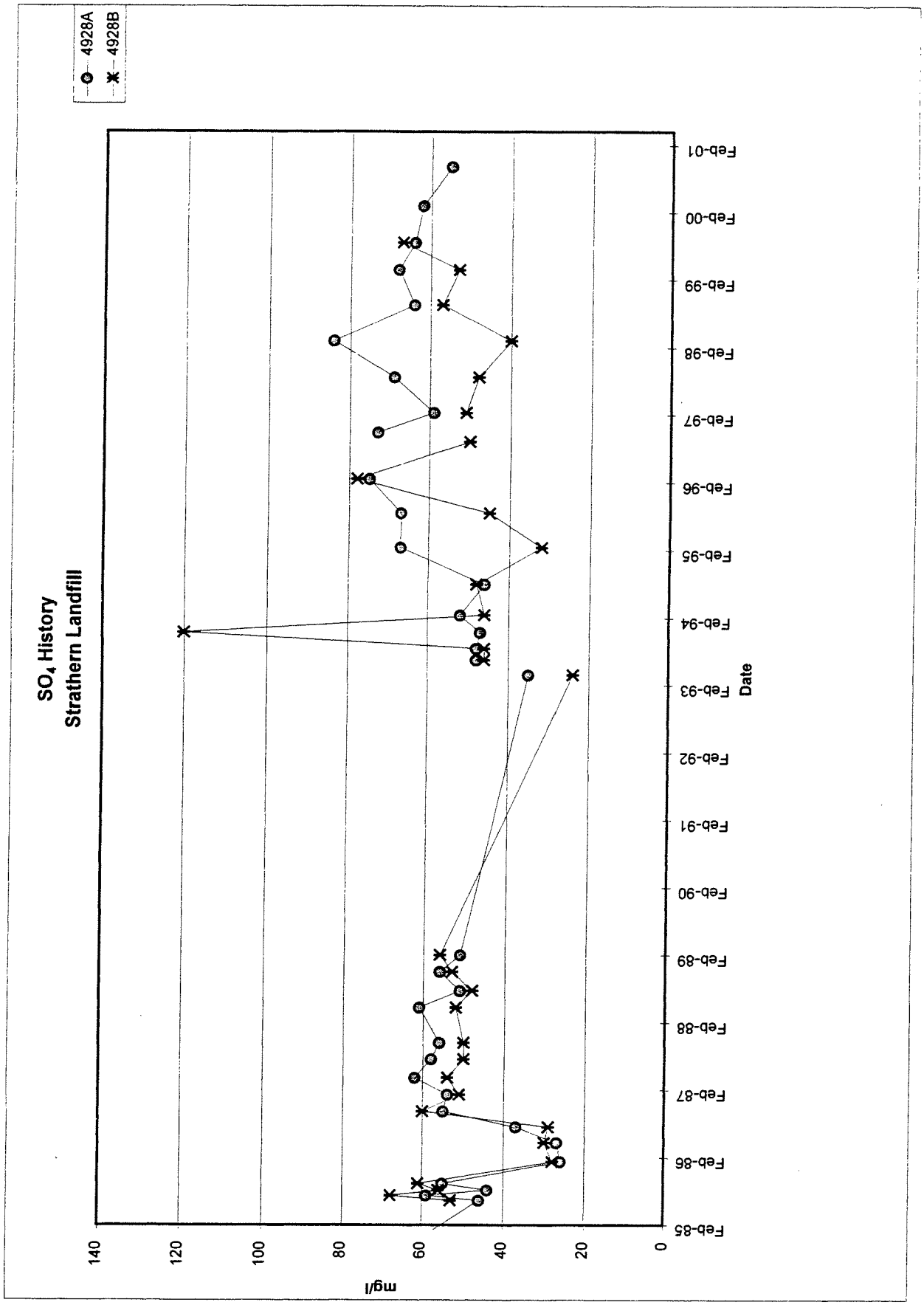
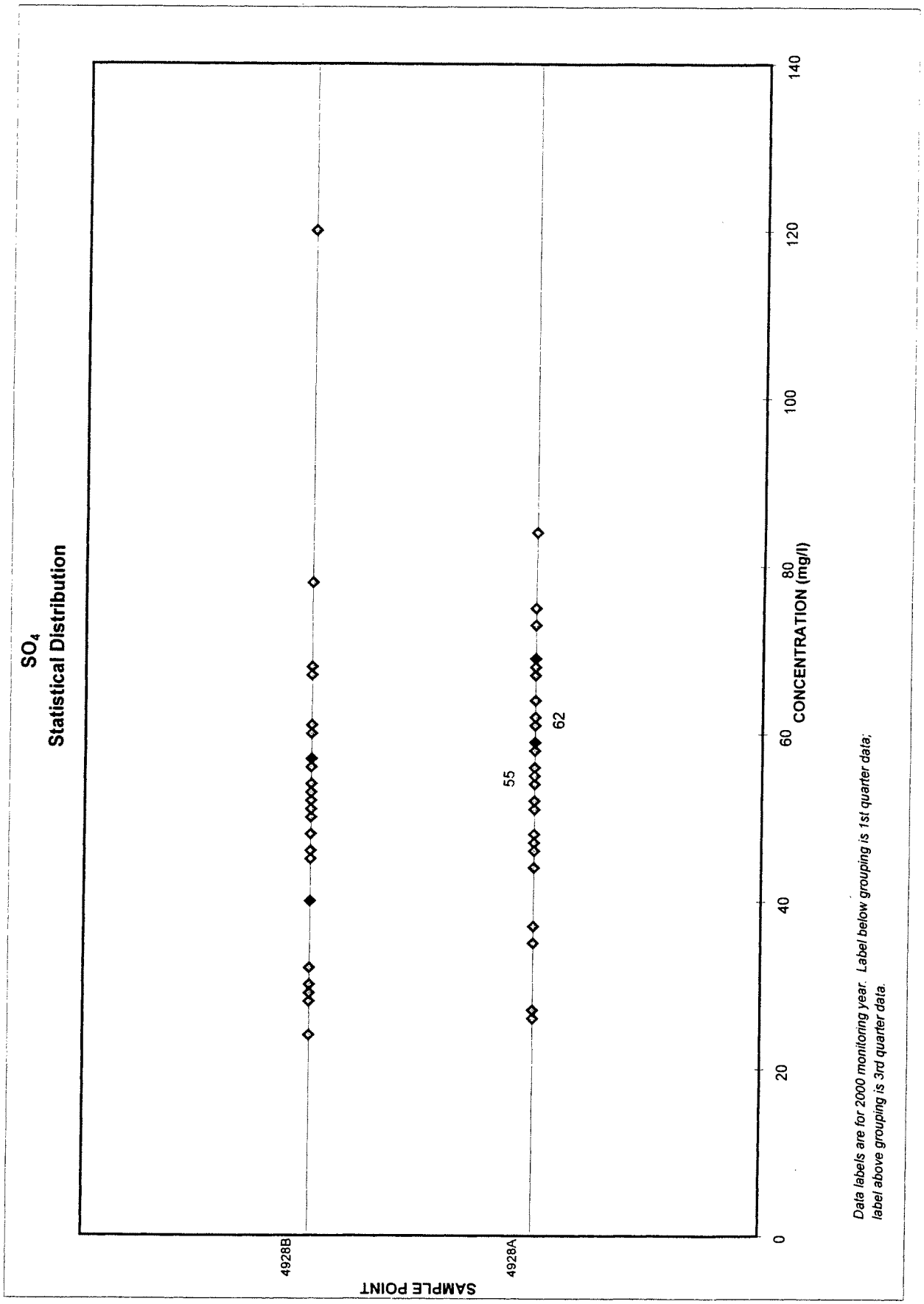
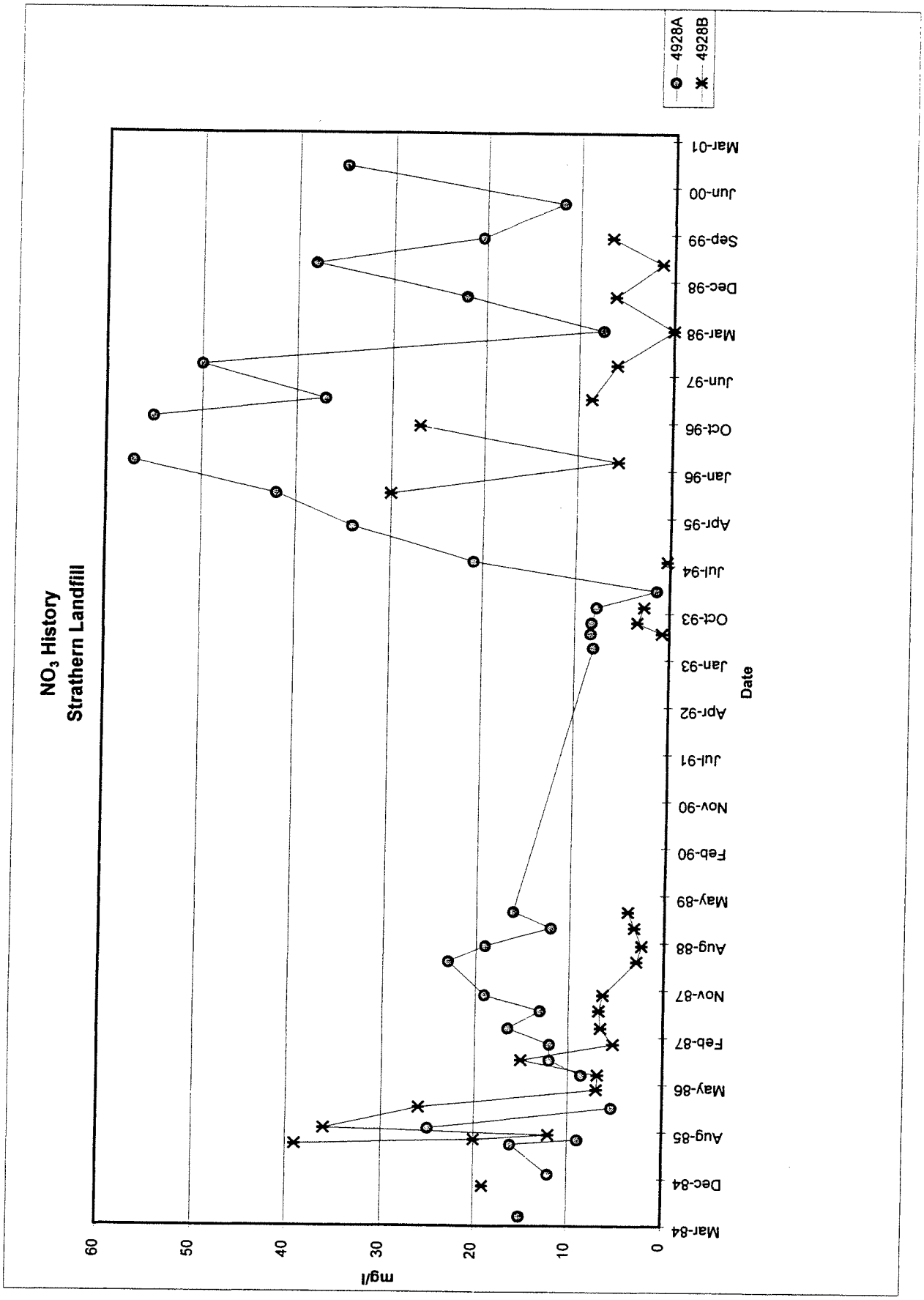

Cl History
Strathern Landfill
4928A
4928B
mg/l
300
250
200
150
100
50
0
Mar-84
Dec-84
Aug-85
May-86
Feb-87
Nov-87
Aug-88
May-89
Feb-90
Nov-90
Jul-91
Apr-92
Jan-93
Oct-93
Jul-94
Apr-95
Jan-96
Oct-96
Jun-97
Mar-98
Dec-98
Sep-99
Jun-00
Mar-01
Date


Cl
Statistical Distribution
SAMPLE POINT
4928B
4928A
0
50
100
150
200
250
300
CONCENTRATION (mg/l)
30
36
Data labels are for 2000 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.


4928A
4928B
SO4 History
Strathern Landfill
mg/l
140
120
100
80
60
40
20
0
Feb-85
Feb-86
Feb-87
Feb-88
Feb-89
Feb-90
Feb-91
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Feb-99
Feb-00
Feb-01
Date


SO_4
Statistical Distribution
SAMPLE POINT
4928B
4928A
0
20
40
60
80
100
120
140
CONCENTRATION (mg/l)
55
62
Data labels are for 2000 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.


NO3 History
Strathern Landfill
4928A
4928B
mg/l
0
10
20
30
40
50
60
Date
Mar-84
Dec-84
Aug-85
May-86
Feb-87
Nov-87
Aug-88
May-89
Feb-90
Nov-90
Jul-91
Apr-92
Jan-93
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Jul-94
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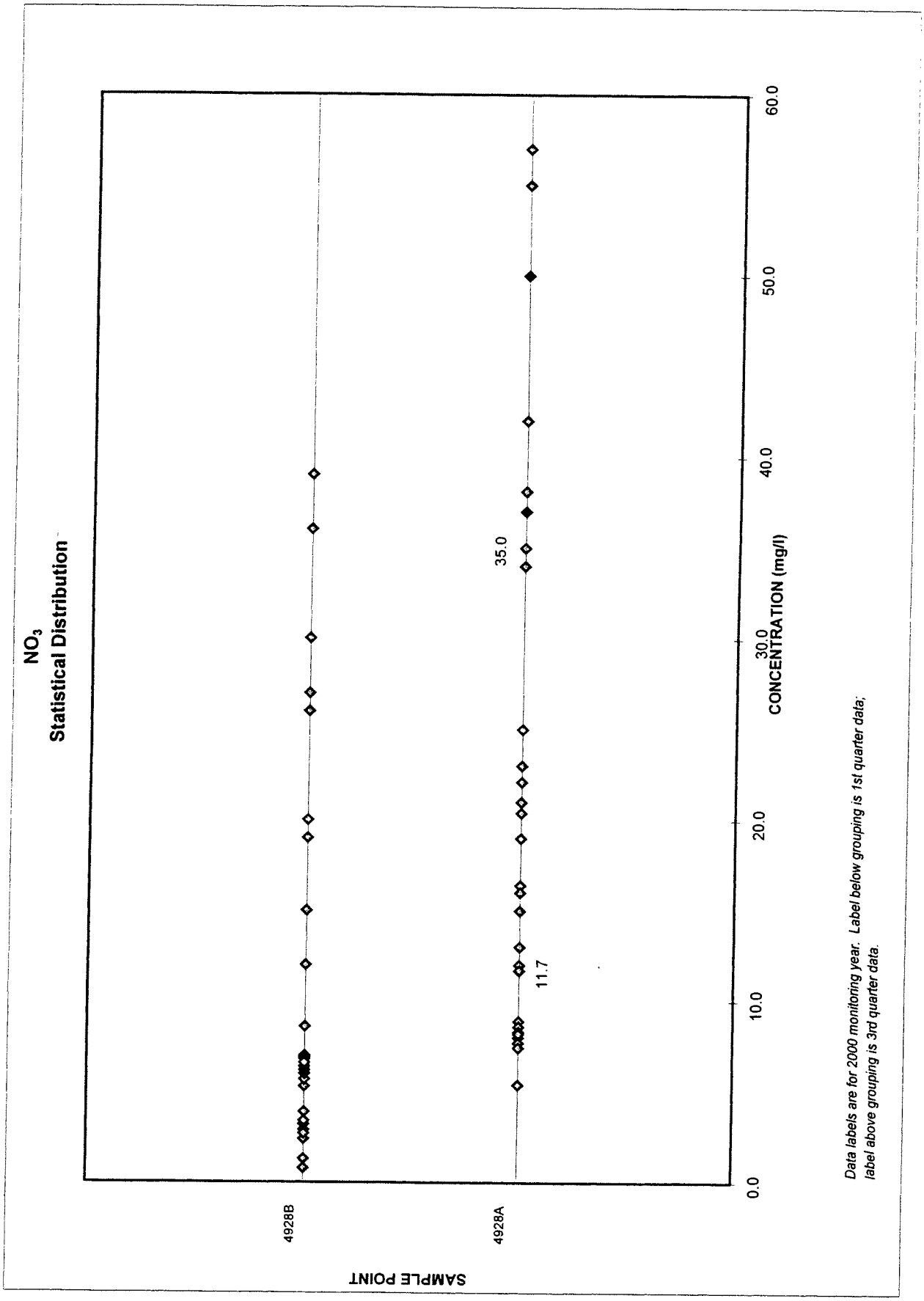
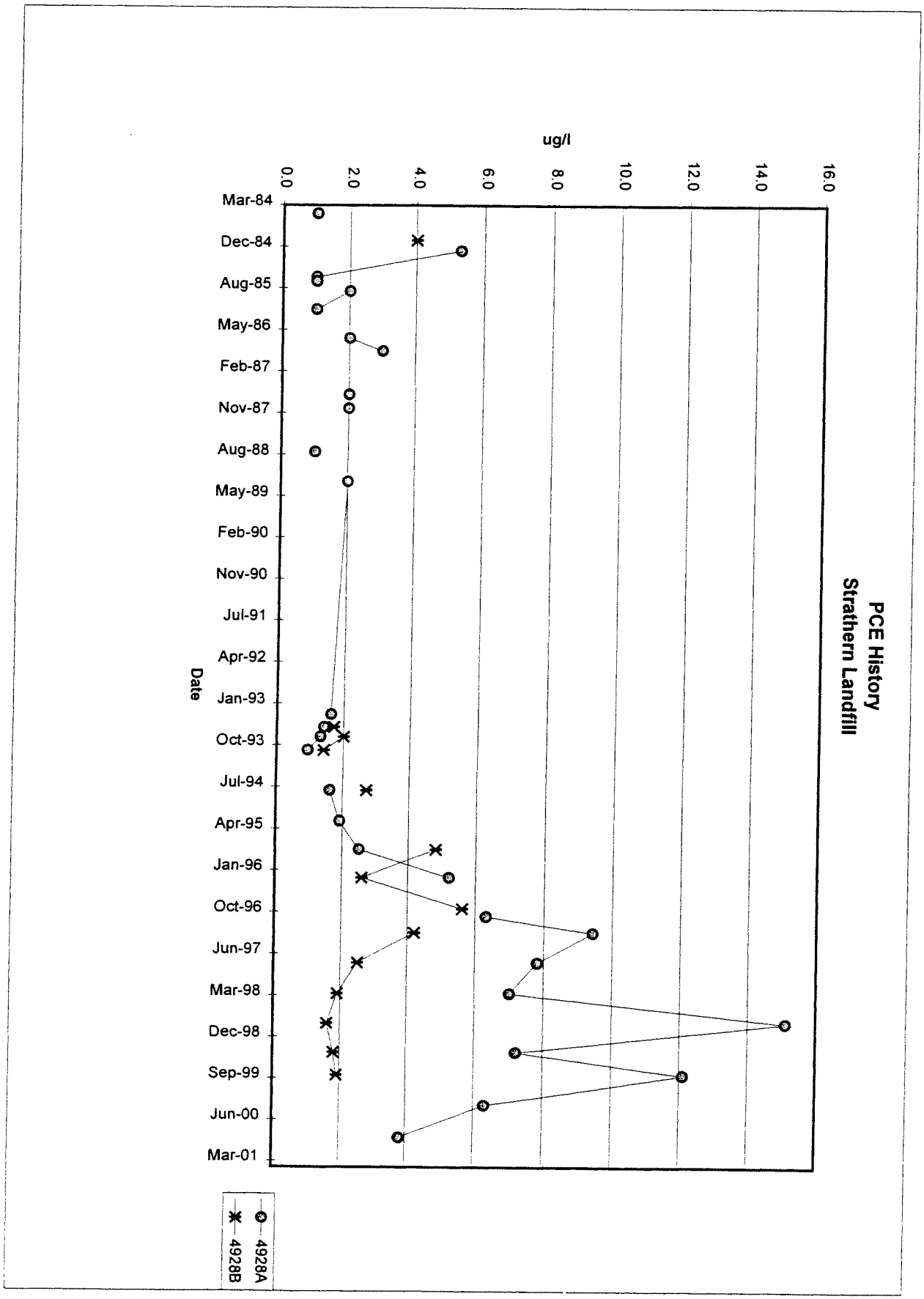
Mar-98
Dec-98
Sep-99
Jun-00
Mar-01


NO3
Statistical Distribution
SAMPLE POINT
4928B
4928A
0.0
10.0
20.0
30.0
40.0
50.0
60.0
CONCENTRATION (mg/l)
35.0
11.7
Data labels are for 2000 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

003502



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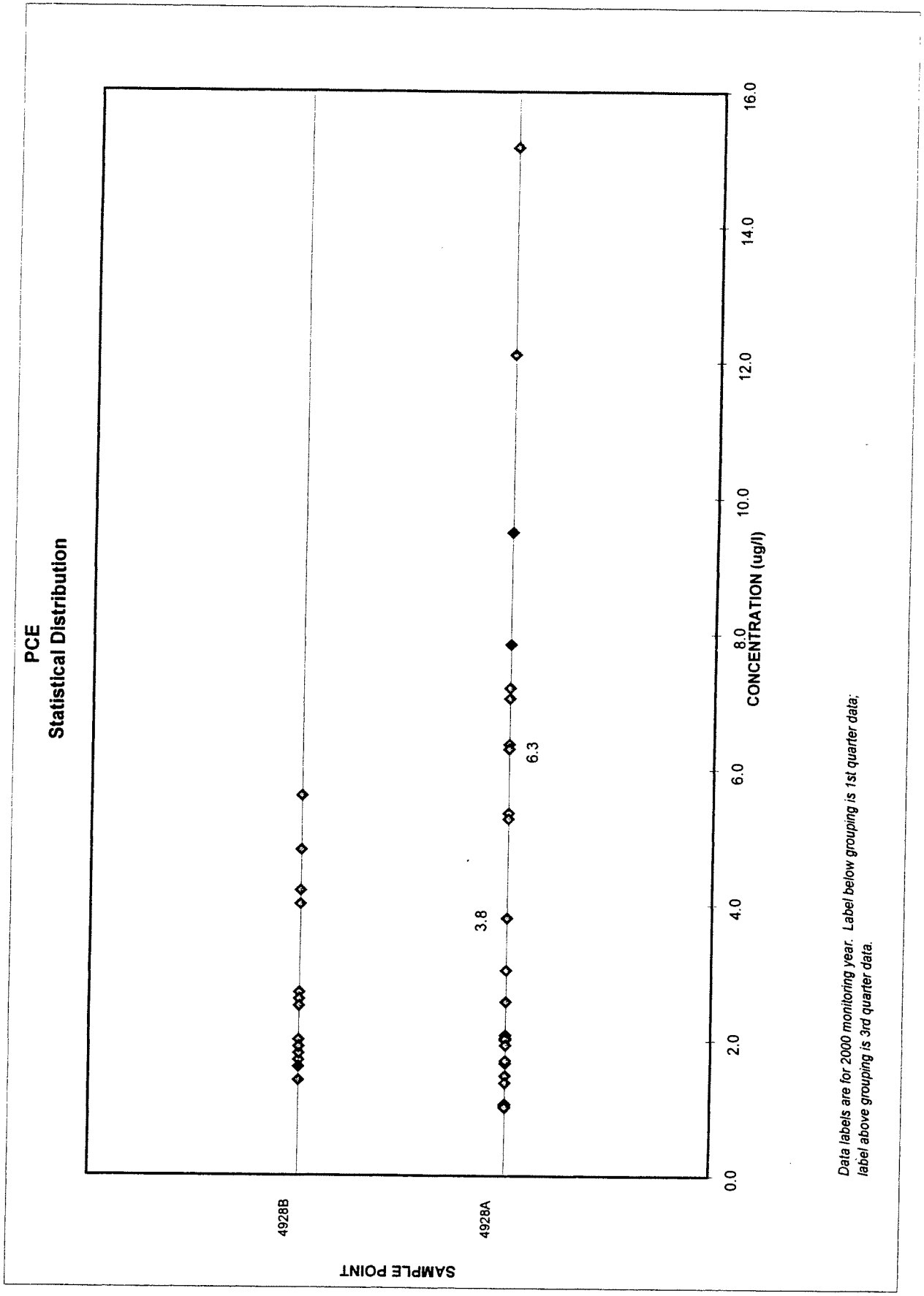
PCE
Statistical Distribution
SAMPLE POINT
4928B
4928A
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
CONCENTRATION (ug/l)
3.8
6.3
Data labels are for 2000 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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LAW

LAWGIBB Group Member

FIRST QUARTER 2000
GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

April 27, 2000

Law/Crandall Project 70111-2-0346

003504

LAW
LAWGIBB Group Member

April 27, 2000

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **First Quarter 2000**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the first quarter 2000 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area during the first quarter 2000 have fallen since the third quarter 1999. Up-gradient well 4928B was dry in the monitoring period. Groundwater quality in down-gradient well 4928A met California Drinking Water Standards for the parameters measured except total dissolved solids (TDS) and tetrachloroethene (PCE). Waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall (LAW) measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the first quarter 2000 groundwater monitoring results. Law/Crandall collected groundwater samples on March 10, 2000, and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples from these wells. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details. During this monitoring period, up-gradient well 4928B was dry. Water levels and groundwater samples were not collected.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the first quarter 2000 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March 2000. The water level at 4928A fell approximately 17 feet and the water level at 4928B fell to below the bottom of the well screen since September 1999. Groundwater levels fell despite spreading of about 4,400 acre-feet of water by the Los Angeles County Department of Public Works at Hansen, Branford, and Tujunga spreading grounds from October 1999 through February 2000.

The groundwater database in Appendix A contains the historic water level data. We did not draw groundwater contours for this quarter because water levels in the measured wells were not amenable to contouring. Figure 2 shows the water elevations. Figure 3 contains the historic hydrographs for the two on-site monitoring wells.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We did not calculate groundwater flow direction and velocity for the first quarter because available data did not yield a sufficiently clear pattern of groundwater surface elevations. In past years, flow direction is usually to the south to southeast and velocity ranges from 0.3 to 1.8 feet per day.

GROUNDWATER QUALITY

We collected a groundwater sample from 4128A on March 10, 2000 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were performed for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains laboratory results for the current sampling event. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for all inorganic constituents tested except total dissolved solids (TDS) in down-gradient well 4928A. The TDS level in 4928B is similar to previous quarters. Up-gradient well 4928B was not sampled during the quarter. Table 2 shows selected first quarter 2000 results compared to California Drinking Water Standards. Appendix C contains the full laboratory report listing all constituents tested.

Organics

Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, and cis-1,2-dichloroethene. Levels were below California Drinking Water Standards except for PCE, which was slightly above the drinking water limit. The organic compound levels in the March 2000 sample were similar to or lower than previous quarters. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

Table 2: Site Water Quality vs. California Drinking Water Standards, 1st Quarter 2000

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) March 2000	4928B (upgradient)
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	509	NS
Chloride (Cl)	250	36	NS
Sulfate (SO_4)	250	62	NS
Nitrate (NO_3)	45	11.7	NS
Iron (Fe)	0.3	0.08	NS
Manganese (Mn)	0.05	<0.005	NS
Zinc (Zn)	5	0.20	NS
Organic (µg/L)			
Trichloroethene (TCE)	5	1.1	NS
Tetrachloroethene (PCE)	5	6.3	NS
1,1-dichloroethane (1,1-DCA)	5	2.4	NS
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.8	NS

** Source: CCR, Title 22, Division 4, Chapter 15*

CONCLUSIONS AND RECOMMENDATIONS

Water levels in the first quarter of 2000 fell from levels measured in the third quarter of 1999. The drop occurred despite moderate precipitation and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. There does not appear to be an association between landfill operations and changes in groundwater character. The potential for contamination is low due to the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible. Historically, low levels of volatile organic compounds have been present in both up-gradient and down-gradient monitoring wells. Well 4928A showed levels of organic and inorganic constituents similar to previous quarters. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Sanford L. Britt, CHG 613
Senior Geologist

William J. O'Braitis, CEG 2037
Principal Geologist

\70111\92_PROJ\20346\2000\0346Q1-00.DOC/SLB:swb
(3 copies submitted)

Enclosure: Envelope addressed to the Regional Water Quality Control Board

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

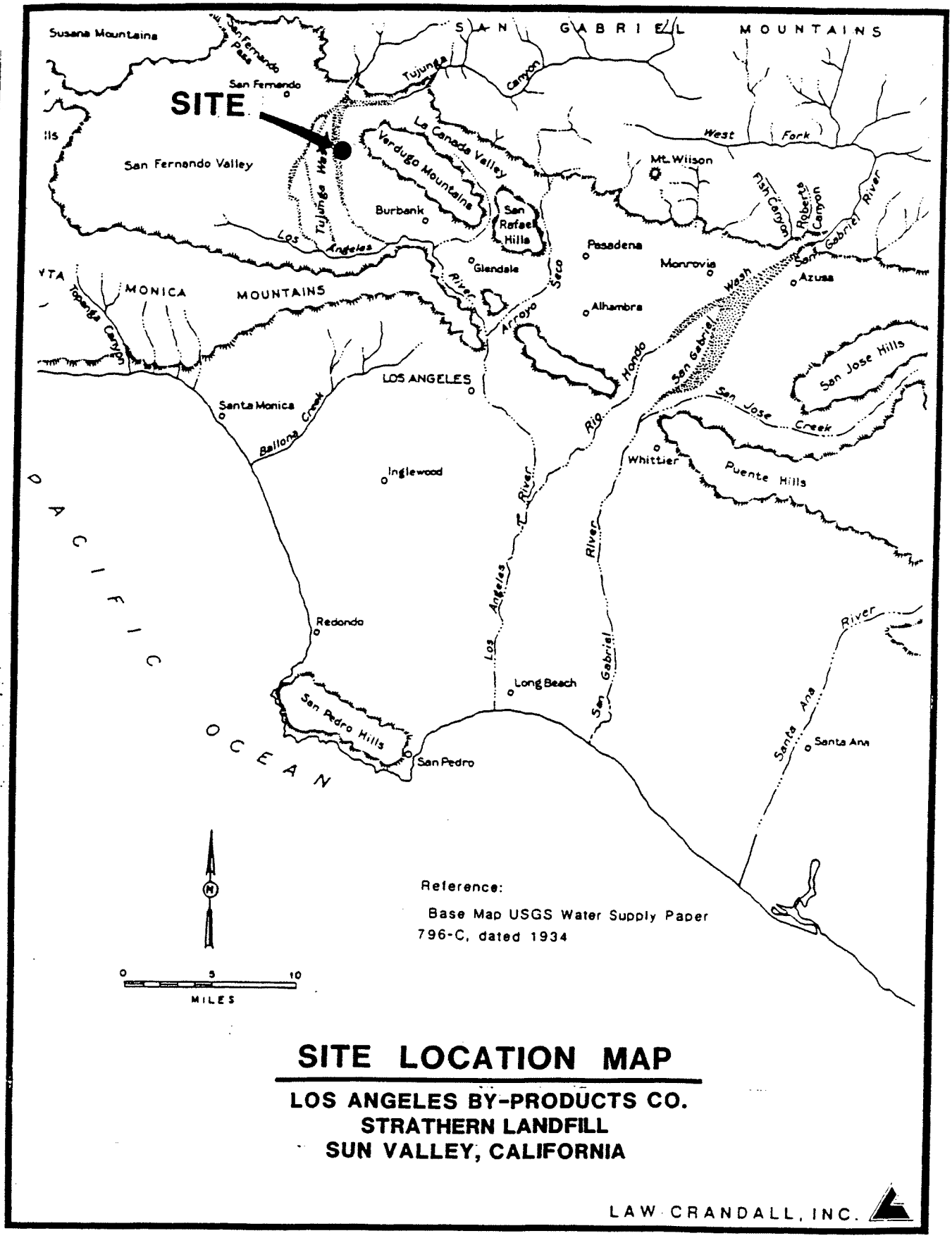
Executed the _____ day of _____, 2000, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

003513



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

CONFIDENTIAL

003514

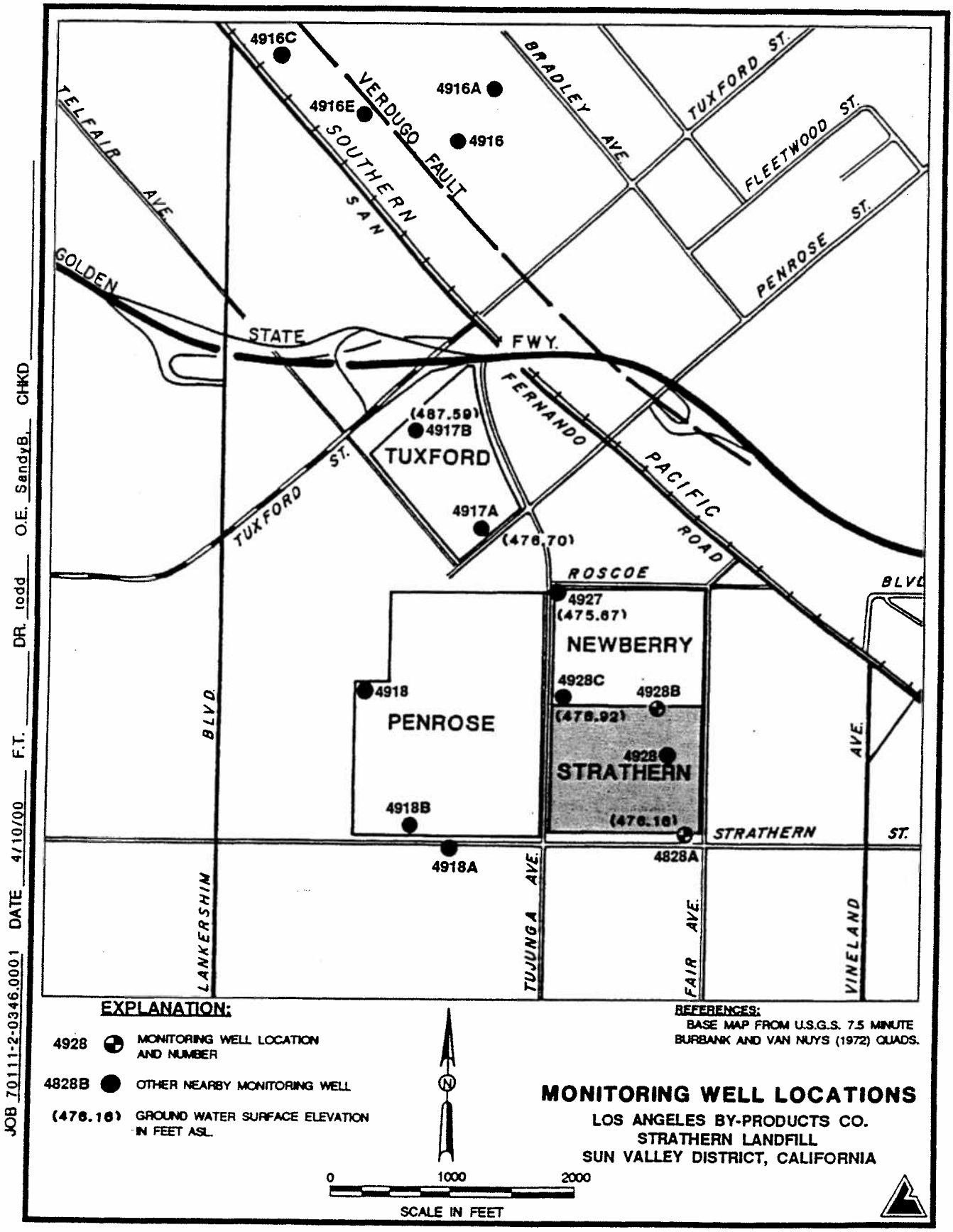
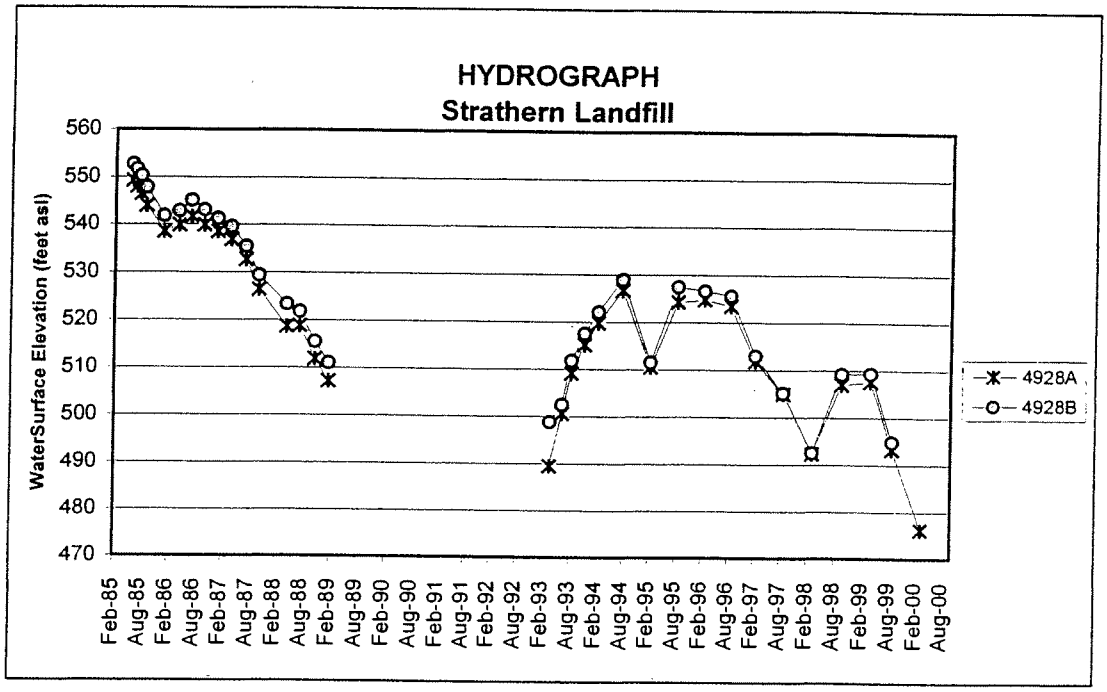


FIGURE 2

CONFIDENTIAL

003515



LAW/CRANDALL

FIGURE 3

CONFIDENTIAL

APPENDIX A

GROUNDWATER DATABASE

Job 70111-2-0346 Date 4/1/20 F.T ___ DR. ___ D.E. SAB CHK ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	4-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.08	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.8	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	18-Jan-86		538.51	7.0	66	1400		180	1400	7.0	180	40	91	8.6	0.0	620	28	150	5.4			880	<0.05	20.0	
4928A	29-Apr-88		539.84	8.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	89	1200	88.0	460	1300	7.1	170	38	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	28.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	180	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		538.86	5.8	89	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	68	950	32.0	203	1000	7.3	110	63	63	8.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	87	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	85	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	86	700	35.0	380	720	7.2	92	21	35	4.5	<0.6	350	51	21	18.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	810	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	87	550	25	244	610	7.1	73	18	30	4.8	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.8	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	850	50	348	830	7.1	100	24	45	5.9	<0.8	430	52	34	1.4	0.3	0.28	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	48	21	0.26	0.48	490			
4928A	20-Feb-95		510.49						830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	860	<6		
4928A	23-Aug-98		523.41																						
4928A	11-Sep-96		NM																						
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	28.5	34.3	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	785	25		916	7.0	97	24.6	31.2	5.0	<2	358	64	29	22.1	0.4	0.40	528	<6		
4928A	30-Mar-99		507.59	7.6	70	829		378	870	7.3	96	25.2	32.8	4.9	<2.0	324	68	33	38	0.3	0.50	565	<8		
4928A	25-Aug-99		493.23	7.5	67	902	37	372	854	7.0	100	27	35.7	4.5	<2.0	332	64	32	20	0.3	0.40	546	<6		
4928A	10-Mar-00		476.16	7.3	64	528	35	340	800	7.1	102	25.6	30.1	7.0	<1	296	62	36	11.7	0.2	0.40	509	22		

NM = Not measured

LAW/CRANDALL

003517

CONFIDENTIAL

JOB 70111-20346 DATE 4/6/00 F.T ___ DR. ___ D.E. ___ CHKD ___ ___ ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96																			
4928A	11-Sep-96																			
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.6	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.5	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.2	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.0	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL
4928A	10-Mar-00	1.1	6.3	<0.25	<0.25	<0.25	0.3			<0.005	<0.01	0.06	0.08		<0.005	<0.05	<0.01		0.20	AETL

NM = Not measured

LAW/CRANDALL

003513

CONFIDENTIAL

JOB 70111-2-0346 DATE 11/1/00 F.T ___ DR. ___ D.E. GB CHK ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			820			
4928B	19-Jun-85		552.73	8.4	70	900	68.0	392	870	7.1	82	24	92	8.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-88		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	8.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.8	86	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	28	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.48	7.8	89	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79		68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950		528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000		NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61																						
4928B	11-Sep-96		NM	7.0	71	1000		595	1100	6.9	160	43	46	6.1	<0.6	830	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.8	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	72	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	74	1152		502	1110	7.0	97	35	81	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	70	835			1020	7.1	72	22	101	7.2	<2.0	438	57	39	6.2	0.3	0.3	618	<6		
4928B	30-Mar-99		509.34	6.9	73	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<6.0		
4928B	25-Aug-99		494.85	7.1	78	1240		828	1180	6.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3	0.3	754	<6.0		
4928B	10-Mar-00		NM																						

NM = Not measured

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JOB 70111-2-0348 DATE 4/1/00 F.T ___ DR. ___ D.E. CB CHKD ___ ___ ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-88	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96																			
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.6	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.96	AETL
4928B	30-Mar-99	0.6	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL
4928B	10-Mar-00																			

NM = Not measured

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be triple rinsed from current well water before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Up-gradient wells shall be sampled first, and then the down-gradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s) shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. The chain-of-custody record and other pertinent forms shall accompany all packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Sto Aban

Number of Pages 12
Date Received 03/10/2000
Date Reported 04/03/2000

Job Number	Order Date	Client
14859	03/10/2000	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Sun Valley

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Seream Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 14859 PAGE ___ OF ___

CHAIN OF CUSTODY RECORD

CLIENT: LAW/CRANDALL TELEPHONE: (323) 8895300
FAX: (323) 724-6700
ADDRESS: 200 N. Citadel DR LA CA 90040
SITE: SUN VALLEY
CONTACT PERSON: Sto ABAN PROJECT NAME: STRATHERN PROJECT NUMBER: 7041-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: GENERAL MINERALS	BORON	COD	SO4.2	Cd Cr N. Pb	REMARKS
4928A	AE70724	3/10/00	0945	VOA		X				ICE	X	X	X	X	X	
TRIP BLANK	AE70725	3/10/00		VOA						ICE				X		

Collected By: MIKE EAGEN Date 3/10/00 Time 1200
Relinquished By: Date 3/10/00 Time 1200
Turn Around Time: X Normal ☐ Rush

Delivered By: Date Time
Received For Laboratory: Date 3/10/00 Time 12:00

0035?6

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Our Lab I.D.							AE70724	
Client Sample I.D.						Method Blank	4928A	
Date Sampled						03/10/2000	03/10/2000	
Matrix						Aqueous	Aqueous	
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Cadmium	200.7	mg/L	0.005	0.005	03/30/2000	ND	ND	
Chromium	200.7	mg/L	0.01	0.01	03/30/2000	ND	ND	
Lead	200.7	mg/L	0.05	0.05	03/30/2000	ND	ND	
Nickel	200.7	mg/L	0.01	0.04	03/30/2000	ND	ND	
Chemical Oxygen Demand	410.4	mg/L	5.0	6.0	03/16/2000	ND	22	
Boron	SM-4500B	mg/L	0.1	0.2	03/13/2000	ND	0.2	

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ANALYTICAL RESULTS

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site
Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03102000 / 03102000

Our Lab I.D.				AE70724			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			03/10/2000	03/10/2000			
Date Prepared			03/10/2000	03/10/2000			
Preparation Method			GEN-MIN.	GEN-MIN.			
Date Analyzed			03/20/2000	03/20/2000			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	296			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	296			
Anions Total (meq/L)	0.01	0.01	ND	9.08			
Cations Total (meq/L)	0.01	0.01	ND	8.71			
Ion Balance (percent difference)	0.01	0.01	ND	-2.07			
pH (pH units)	0.01	0.01	NA	7.13			
Chloride (Cl), Total	0.5	1.0	ND	36			
Conductivity (umhos/cm @77F)	5	10	ND	802			
Fluoride, Total	0.1	0.2	ND	0.4			
Hardness (Ca,Mg) as CaCO3	1	2	ND	358			
Nitrate as Nitrogen	0.05	0.10	ND	11.7			
Nitrite as Nitrogen	0.01	0.02	ND	ND			
Sulfate	5	10	ND	62			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	509			
Aluminum	0.05	0.10	ND	0.3			
Calcium	0.25	0.50	ND	102			
Copper	0.01	0.02	ND	0.06			
Iron	0.03	0.05	ND	0.08			
Magnesium	0.25	0.50	ND	25.6			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	7.0			
Sodium	0.25	0.50	ND	30.1			
Zinc	0.01	0.03	ND	0.20			

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 4
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 03232000 / 03232000

Our Lab I.D.				AE70724	AE70725		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			03/10/2000	03/10/2000	03/10/2000		
Date Prepared			03/23/2000	03/23/2000	03/23/2000		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			03/23/2000	03/23/2000	03/23/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	1.2	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	2.0	ND		
1,1-Dichloroethane	0.25	0.50	ND	2.4	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 5
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 03232000 / 03232000

Our Lab I.D.				AE70724	AE70725		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			03/10/2000	03/10/2000	03/10/2000		
Date Prepared			03/23/2000	03/23/2000	03/23/2000		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			03/23/2000	03/23/2000	03/23/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.8	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	6.3	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	1.1	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE70724	AE70725		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		95	85	103		
1,2-Dichlorobenzene	75-125		89	84	111		

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ANALYTICAL RESULTS

Ordered By

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200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 200.7, Metals

QUALITY CONTROL REPORT

QC Batch Number: 03302000 / 03302000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.0	1.0	99	1.0	1.0	98	1.0	80-120	<15	
Chromium	1.0	1.0	100	1.0	1.0	99	1.0	80-120	<15	
Lead	1.0	1.0	103	1.0	1.0	99	4.0	80-120	<15	
Nickel	1.0	1.0	97	1.0	1.0	96	1.0	80-120	<15	

QC Batch Number: 03302000 / 03302000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.0	1.0	102	80-120						
Chromium	1.0	1.0	101	80-120						
Lead	1.0	1.0	99	80-120						
Nickel	1.0	1.0	102	80-120						

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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 03162000 / 03162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.0	49.0	98	50.0	48.0	96	2.1	80-120	<15	

QC Batch Number: 03162000 / 03162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	100	100	<1	<15	100.0	97.0	97	80-120		

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ANALYTICAL RESULTS

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Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 03232000 / 03232000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.0	54.5	109	50.0	48.0	96	12.7	75-125	<20	
Chlorobenzene	50.0	56.5	113	50.0	50.0	100	12.2	75-125	<20	
1,1-Dichloroethene	50.0	49.5	99	50.0	43.0	86	14.1	75-125	<20	
Toluene (Methyl benzene)	50.0	55.5	111	50.0	47.5	95	15.5	75-125	<20	
Trichloroethene	50.0	58.0	116	50.0	50.5	101	13.8	75-125	<20	
LCS										
Chloroform (Trichloromethane)			114			101	12.1	75-125	<20	
Ethylbenzene			113			99	13.2	75-125	<20	
1,1,1-Trichloroethane			120			106	12.4	75-125	<20	
Trichloroethene			116			101	13.8	75-125	<20	
o-Xylene			113			100	12.2	75-125	<20	
m,p-Xylenes			115			100	14.0	75-125	<20	

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Site

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Telephone: (323)889-5300
Attn: Sto Aban

Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 03102000 / 03102000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Carbonate (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Hydroxide (as CaCO3)	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Total Alkalinity	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Chloride (Cl), Total	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	1.0	1.0	95	1.0	1.0	100	5.1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.0	20.0	100	20.0	20.0	100	<1	80-120	<15	
Nitrate as Nitrogen	0.5	0.5	99	0.5	0.5	102	3.0	80-120	<15	
Nitrite as Nitrogen	0.2	0.2	103	0.2	0.2	104	<1	80-120	<15	
Sulfate	20.0	19.8	99	20.0	19.8	99	<1	80-120	<15	
Surfactants (MBAS)	0.2	0.2	98	0.2	0.2	96	2.1	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.0	1.1	108	1.0	1.1	110	1.8	80-120	<15	
Calcium	1.0	1.1	107	1.0	1.0	98	8.8	80-120	<15	
Copper	1.0	1.0	98	1.0	1.0	98	<1	80-120	<15	
Iron	1.0	1.0	100	1.0	1.0	100	<1	80-120	<15	
Magnesium	1.0	1.1	107	1.0	1.0	100	6.8	80-120	<15	
Manganese	1.0	0.9	94	1.0	1.0	95	1.1	80-120	<15	
Potassium	1.0	0.9	90	1.0	1.0	98	8.5	80-120	<15	
Sodium	1.0	1.1	105	1.0	1.0	95	10.0	80-120	<15	
Zinc	1.0	1.0	100	1.0	1.0	101	<1	80-120	<15	

QC Batch Number: 03102000 / 03102000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.0	20.0	100	80-120						
Carbonate (as CaCO3)	20.0	20.0	100	80-120						
Hydroxide (as CaCO3)	20.0	20.0	100	80-120						

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ANALYTICAL RESULTS

Page: 11
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
14859	03/10/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 03102000 / 03102000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit
Total Alkalinity	20.0	20.0	100	80-120
pH (pH units)	7.0	7.0	100	80-120
Chloride (Cl), Total	20.0	20.0	100	80-120
Conductivity (umhos/cm @77F)	141.3	139.9	99	80-120
Fluoride, Total	1.0	1.0	95	80-120
Hardness (Ca,Mg) as CaCO3	20.0	20.0	100	80-120
Nitrate as Nitrogen	0.5	0.5	101	80-120
Nitrite as Nitrogen	0.2	0.2	104	80-120
Sulfate	20.0	19.6	98	80-120
Surfactants (MBAS)	0.2	0.2	103	80-120
Total Dissolved Solids	100.0	101.0	101	80-120
Aluminum	1.0	1.1	106	80-120
Calcium	1.0	1.1	105	80-120
Copper	1.0	1.0	101	80-120
Iron	1.0	1.1	105	80-120
Magnesium	1.0	1.1	105	80-120
Manganese	1.0	1.0	101	80-120
Potassium	1.0	1.0	96	80-120
Sodium	1.0	1.0	99	80-120
Zinc	1.0	1.0	102	80-120

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ANALYTICAL RESULTS

Ordered By

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Site

Sun Valley

Telephone: (323)889-5300
Attn: Sto Aban

Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
14859	03/10/2000	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 03132000 / 03132000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.5	0.5	95	0.5	0.5	97	2.1	80-120	<15	

QC Batch Number: 03132000 / 03132000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.3	0.3	<1	<15	0.5	0.5	98	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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LAWGIBB GROUP

THIRD QUARTER 2000 GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

October 31, 2000

Law/Crandall Project 70111-2-0346

003539

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LAW Crandall
LAWGIBB Group Member

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October 31, 2000

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **Third Quarter 2000**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the third quarter 2000 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area during the third quarter 2000 have increased since the first quarter 2000. Up-gradient well 4928B was dry in the monitoring period. Groundwater quality in down-gradient well 4928A met California Drinking Water Standards for the parameters measured except total dissolved solids (TDS). Waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall (LAW) measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the third quarter 2000 groundwater monitoring results. Law/Crandall collected groundwater samples on October 9, 2000, and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified by the California Department of Health Services for the analyses they performed.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples from these wells. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details. During this monitoring period, up-gradient well 4928B was dry. Water levels and groundwater samples were not collected.

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Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A (downgradient)	L.A. By-Products	803.78	433	225-433
4928B (upgradient)	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the third quarter 2000 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels on October 6, 2000. The water level at 4928A increased approximately 5.5 feet and the water level at 4928B stayed near the well screen since March 2000. Groundwater levels remained near the site's historic low groundwater surface levels. The spreading of approximately 10,623 acre-feet of water by the Los Angeles County Department of Public Works at Hansen, Branford, and Tujunga spreading grounds from October 1999 through August 2000 may have contributed to the minor increase of groundwater levels.

The groundwater database in Appendix A contains the historic water level data. Groundwater contours for the third quarter in 2000 are drawn on the Groundwater Contour Map included as Appendix B. Figure 3 contains the historic hydrographs for the two on-site monitoring wells.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We groundwater flows from north to south at about 0.4 feet per day during the third quarter. In past years, flow direction is usually to the south to southeast and velocity ranges from 0.3 to 1.8 feet per day.

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GROUNDWATER QUALITY

We collected a groundwater sample from 4928A on October 9, 2000 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were performed for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains laboratory results for the current sampling event. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during the third quarter, the groundwater met California Drinking Water Standards for all inorganic constituents tested except total dissolved solids (TDS) in down-gradient well 4928A. The TDS level in 4928A is similar to previous quarters. Up-gradient well 4928B was not sampled during the quarter because the well was dry. Table 2 shows selected third quarter 2000 results compared to California Drinking Water Standards. Appendix C contains the full laboratory report listing all constituents tested.

Organics

Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, and cis-1,2-dichloroethene. Levels were below California Drinking Water Standards. The organic compound levels in the October 2000 sample were similar to or lower than previous quarters. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

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Table 2: Site Water Quality vs. California Drinking Water Standards, Third Quarter 2000

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) March 2000	4928B (upgradient)
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	501	NS
Chloride (Cl)	250	30	NS
Sulfate (SO_4)	250	55	NS
Nitrate (NO_3)	45	35	NS
Iron (Fe)	0.3	<0.03	NS
Manganese (Mn)	0.05	<0.005	NS
Zinc (Zn)	5	0.19	NS
Organic (µg/L)			
Trichloroethene (TCE)	5	0.9	NS
Tetrachloroethene (PCE)	5	3.8	NS
1,1-dichloroethane (1,1-DCA)	5	3.9	NS
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.6	NS

* *Source: CCR, Title 22, Division 4, Chapter 15*

CONCLUSIONS AND RECOMMENDATIONS

Water levels in the third quarter of 2000 increased slightly from levels measured in the first quarter of 2000. Moderate precipitation and recharge operations at the Hansen, Branford, and Tujunga spreading grounds may have contributed to the increase in groundwater levels. There does not appear to be an association between landfill operations and changes in groundwater character. The potential for contamination is low due to the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible. Historically, low levels of volatile organic compounds have been present in both up-gradient and down-gradient monitoring wells. Well 4928A showed levels of organic and inorganic constituents similar to previous quarters. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Jade Katsuda
Staff Engineer

William J. O'Braitis, CEG 2037
Principal Geologist

\70111\92_PROJ\20346\2000\0346Q3-00.DOC/SLB:swb
(3 copies submitted)

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 31ST day of OCTOBER, 2000, at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

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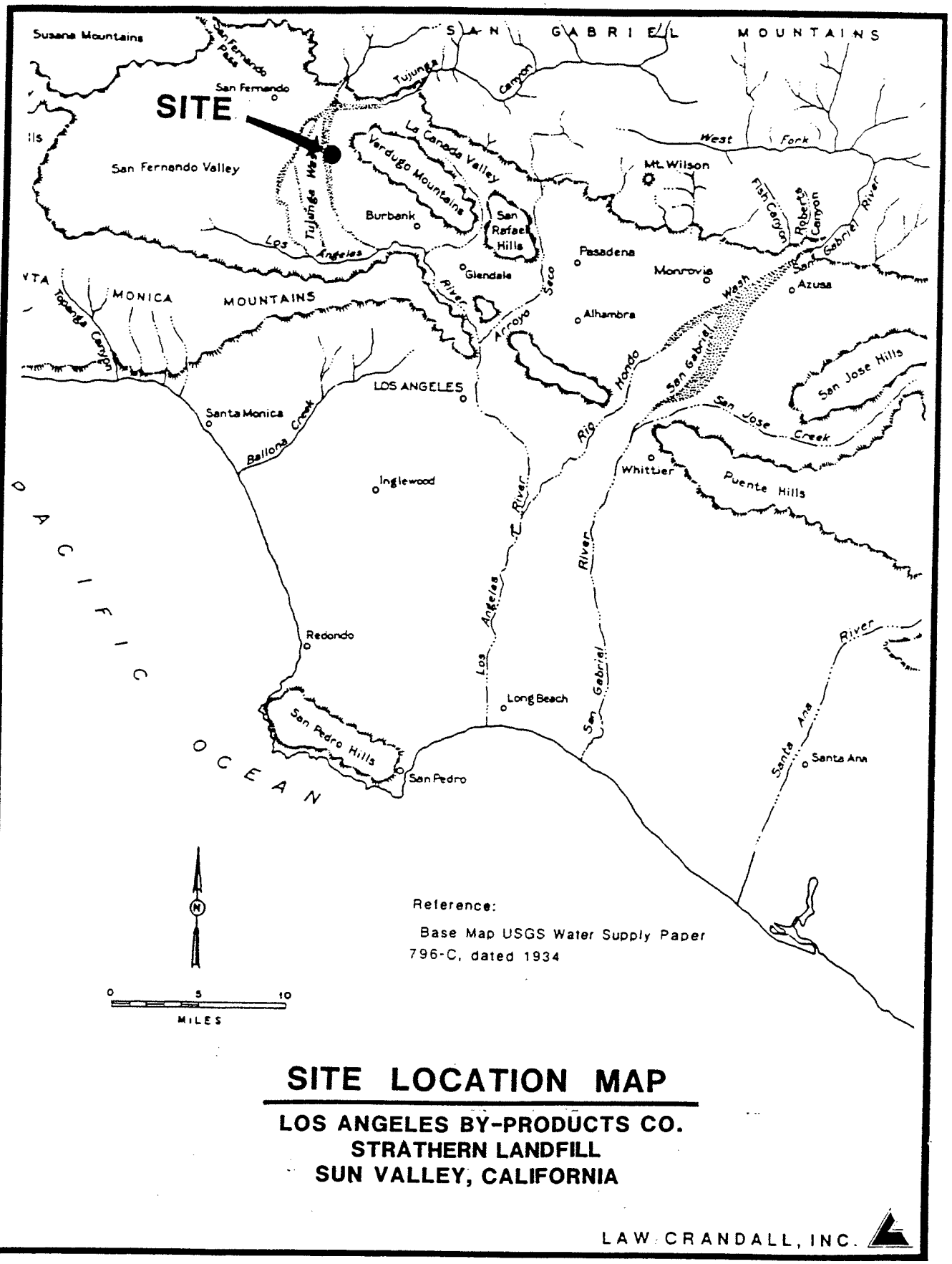

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

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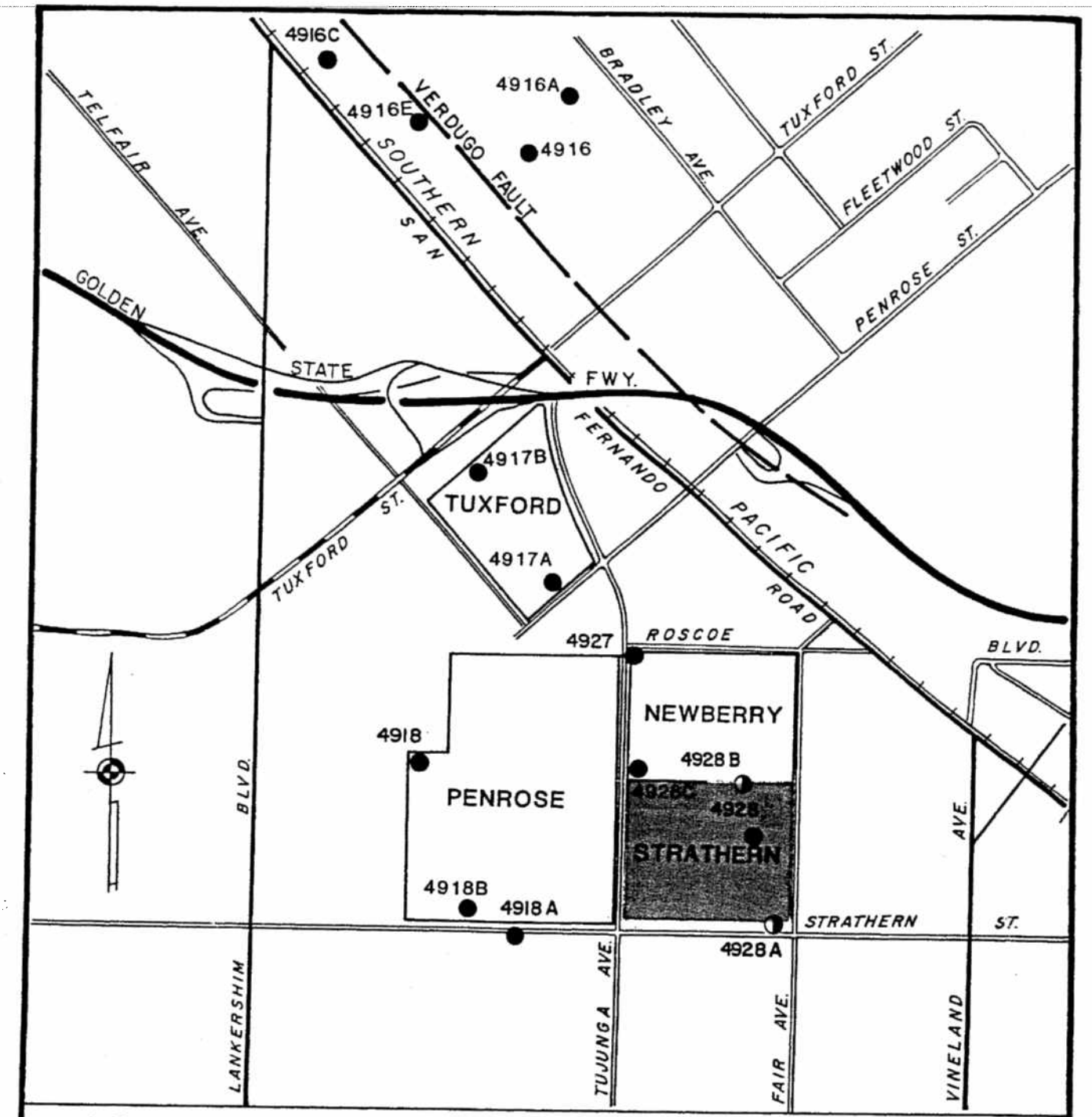


EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:
BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

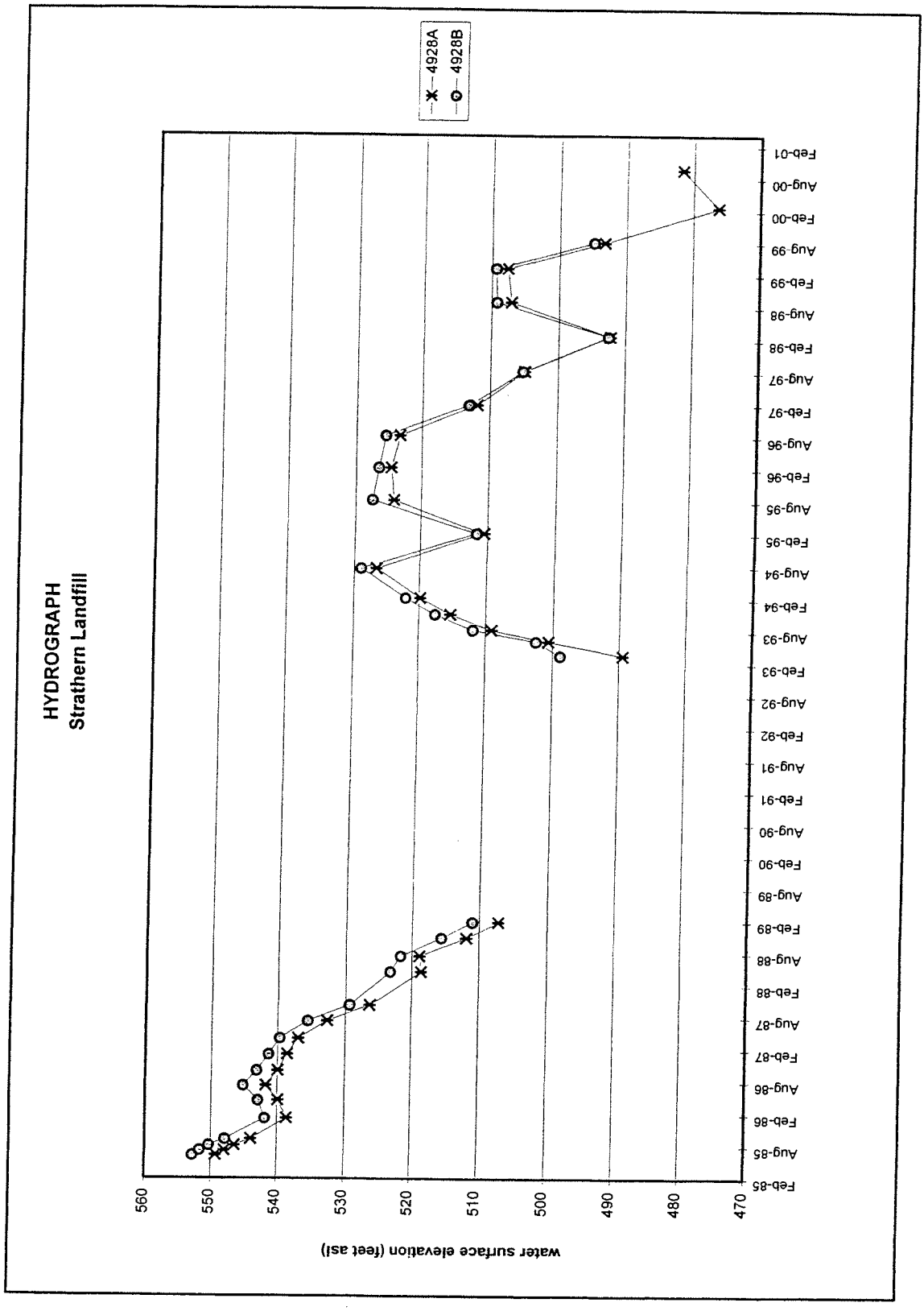
0 1000 2000
SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2



LAW/CRANDALL

FIGURE 3

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 10-31-00 F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL (ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO_2	Alk	EC	LpH	Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	NO_3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	.6-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	85	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	18	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	508	1300	7.0	130	38	90	9.0	0.0	490	48	87	18.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	8.8	68	1180	102.0	480	1300	6.9	120	34	93	8.8	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	8.8	74	1250	22.5		1400	7.8	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-88		538.51	7.0	68	1400		180	1400	7.0	160	40	91	8.6	0.0	620	28	150	5.4			880	<0.05	20.0	
4928A	29-Apr-88		539.84	8.6	68	900	68.0	350	1100	7.8	170	27	63	7.8	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	480	1300	7.1	170	36	80	8.0	0.0	390	37	280	8.8			780	0.11	5.0	
4928A	15-Oct-88		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.8	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	89	1100	42.5	490	1500	8.8	170	44	85	6.8	<0.8	650	62	130	18.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	830	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	8.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.8	590	58	83	19.0	0.83	0.30	780	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	86	950	32.0	203	1000	7.3	110	63	83	6.4	<0.6	480	81	50	23.0	0.3	0.34	800	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.8	<0.6	442	51	38	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.8	370	58	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	68	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	18.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<8		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	810	7.1	73	18	30	4.8	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	86	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.84	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.28	530			
4928A	05-Aug-94		526.64	7.0	68	700	55	358	820	7.0	91	23	39	5.4	<1	330	46	48	21	0.26	0.48	490			
4928A	20-Feb-95		510.49						830	6.9	97	25	36	5.3	<0.8	390	87	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	8.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41																						
4928A	11-Sep-98		NM																						
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.28	0.48	830	<8		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	8.8	110	27	41	5.5	0	400	89	38	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	26.5	34.3	6.4	<2.0	320	84	50	7.4	0.8	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	785	25		818	7.0	97	24.6	31.2	5.0	<2	358	84	29	22.1	0.4	0.40	528	<6		
4928A	30-Mar-99		507.59	7.6	70	829		378	870	7.3	96	25.2	32.8	4.9	<2.0	324	68	33	38	0.3	0.50	585	<6		
4928A	25-Aug-99		493.23	7.5	87	902	37	372	854	7.0	100	27	35.7	4.5	<2.0	332	64	32	20	0.3	0.40	546	<6		
4928A	10-Mar-00		478.16	7.3	64	528	35	340	800	7.1	102	25.8	30.1	7.0	<1	298	62	36	11.7	0.2	0.40	509	22		
4928A	09-Oct-00		481.83	8.8	67	800	30	372	790	8.8	94	24.2	32.6	5.5	<1	286	55	30	35.0	0.2	0.40	501	<5		

NM = Not measured

LAW/CRANDALL

003552

CONFIDENTIAL

JOB 70111-2-0346 DATE 16-31-00 F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	0.5	6	0.5	1.0	0.05	0.05	0.005	0.05	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.870	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.080		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.810	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.480	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0 37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.8	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96																			
4928A	11-Sep-96																			
4928A	31-Oct-96	0.58	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.6	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.5	15.1	0.8	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.2	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.0	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL
4928A	10-Mar-00	1.1	6.3	<0.25	<0.25	<0.25	0.3			<0.005	<0.01	0.06	0.08		<0.005	<0.05	<0.01		0.20	AETL
4928A	09-Oct-00	0.9	3.8	<0.25	<0.25	<0.25	0.08J			<0.005	0.02	<0.01	<0.03		<0.005	<0.05	<0.01		0.19	AETL

NM = Not measured

LAW/CRANDALL

003553

CONFIDENTIAL

JOB 70111-2-0346 DATE 10-31-00 F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL (ppm)					
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	80.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	8.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-88		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-88		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	8.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.8	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.8	370	50	21	8.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	338	680	7.5	85	20	30	3.9	<0.8	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	86	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	8.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79		68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4926B	05-Aug-94		528.93	7.0	68	950		528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000		NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61																						
4928B	11-Sep-96		NM	7.0	71	1000		595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.8	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	72	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	74	1152		502	1110	7.0	97	35	81	9	<2.0	502	40	58	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	70	835			1020	7.1	72	22	101	7.2	<2.0	438	57	39	6.2	0.3	0.3	616	<6		
4926B	30-Mar-99		509.34	6.9	73	1381		532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<6.0		
4928B	25-Aug-99		494.85	7.1	78	1240		628	1180	6.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3	0.3	754	<6.0		
4928B	10-Mar-00		DRY																						
4928B	09-Oct-00		DRY																						

NM = Not measured

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JOB 70111-2-0346 DATE 10-31-00 F.T. _____ DR. _____ O.E. AH CHKD SCP

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.048		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.88	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.084	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96																			
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.84	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	28-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.48	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.8	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.98	AETL
4928B	30-Mar-99	0.6	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL
4928B	10-Mar-00																			
4928B	09-Oct-00																			

NM = Not measured

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APPENDIX B

GROUNDWATER CONTOUR MAP

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GROUND WATER CONTOUR MAP

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL

FIGURE B

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APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be triple rinsed from current well water before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Up-gradient wells shall be sampled first, and then the down-gradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s) shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. The chain-of-custody record and other pertinent forms shall accompany all packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.

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Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Telephone: (323)889-5300
Attention: Bill O'Braitis

Number of Pages 12
Date Received 10/09/2000
Date Reported 10/17/2000

Job Number	Order Date	Client
16639	10/09/2000	LC

Project ID: 70111-2-0346
Project Name: Strathern
Site: Strathern Landfill

Enclosed please find results of analyses of 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Seream

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

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CHAIN OF CUSTODY RECORD

COMPANY: LAW CRANDALL | PHONE: 323-889-5300
PROJECT MANAGER: Bill O'Brait73 | FAX: 323-721-6700
PROJECT NAME: Strathern | PROJECT #: 70111-2-0346
SITE NAME AND ADDRESS: Strathern Landfill

AETL JOB No. 16639 | Page 1 of 1

SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
4928A	AE78732	10-9-00	1305	Water	Various	None
~~4928B~~		~~10-6-00~~		~~Water~~	~~Various~~	
Trip Blank	AE78733	10-6-00		Water	Various	

ANALYSIS REQUESTED

General M. metals	Boron	COD	5442	Cd, Cr, Ni, Pb
X	X	X	X	X
X	X	X	X	X
			X	

TEST INSTRUCTIONS & COMMENTS

Filter metals
Filter metals

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	10	PROPERLY COOLED (Y) N / NA	
CUSTODY SEALS Y / N / (NA)		SAMPLES INTACT (Y) N / NA	
RECEIVED IN GOOD COND. (Y) N		SAMPLES ACCEPTED (Y) N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY 24 HRS. ☐ 48 HRS. ☐ 72 HRS.

RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Sto Abas	Signature:	Signature:
Printed Name: Sto Abas	Printed Name:	Printed Name:
Date: 10-9-00 Time: 1350	Date: Time:	Date: Time:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY LABORATORY: 3.**
Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:
Date: Time:	Date: Time:	Date: 10/9/00 Time: 1352

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page 2
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Our Lab I.D.							AE78732	
Client Sample I.D.						Method Blank	4928A	
Date Sampled						10/09/2000	10/09/2000	
Matrix						Aqueous	Aqueous	
Analytes	**Method**	**Units**	**MDL**	**PQL**	**Analyzed**	**Results**	**Results**	
Chemical Oxygen Demand	410.4	mg/L	5.0	6.0	10/16/2000	ND	ND	
Cadmium	6010BSCAN	mg/L	0.005	0.005	10/11/2000	ND	ND	
Chromium	6010BSCAN	mg/L	0.01	0.01	10/11/2000	ND	0.02	
Lead	6010BSCAN	mg/L	0.05	0.05	10/11/2000	ND	ND	
Nickel	6010BSCAN	mg/L	0.01	0.04	10/11/2000	ND	ND	
Boron	SM-4500B	mg/L	0.1	0.2	10/16/2000	ND	0.2	

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ANALYTICAL RESULTS

Ordered By

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200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 3
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10132000 / 10132000

Our Lab I.D.				AE78732	AE78733		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			10/09/2000	10/09/2000	10/06/2000		
Date Prepared			10/13/2000	10/13/2000	10/13/2000		
Preparation Method			5035	5035	5035		
Date Analyzed			10/13/2000	10/13/2000	10/13/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzene	0.25	0.50	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.25	0.50	ND	ND	ND		
Bromochloromethane	0.25	0.50	ND	ND	ND		
Bromodichloromethane	0.25	0.50	ND	ND	ND		
Bromoform (Tribromomethane)	0.25	0.50	ND	ND	ND		
Bromomethane (Methyl bromide)	0.25	0.50	ND	ND	ND		
n-Butylbenzene	0.25	0.50	ND	ND	ND		
sec-Butylbenzene	0.25	0.50	ND	ND	ND		
tert-Butylbenzene	0.25	0.50	ND	ND	ND		
Carbon tetrachloride	0.25	0.50	ND	ND	ND		
Chlorobenzene	0.25	0.50	ND	ND	ND		
Chloroethane	0.25	0.50	ND	ND	ND		
Chloroform (Trichloromethane)	0.25	0.50	ND	ND	ND		
Chloromethane (Methyl chloride)	0.25	0.50	ND	ND	ND		
2-Chlorotoluene	0.25	0.50	ND	ND	ND		
4-Chlorotoluene	0.25	0.50	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	0.5	1.0	ND	ND	ND		
Dibromochloromethane	0.25	0.50	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.25	0.50	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,3-Dichlorobenzene	0.25	0.50	ND	ND	ND		
1,4-Dichlorobenzene	0.25	0.50	ND	ND	ND		
Dichlorodifluoromethane	0.25	0.50	ND	2.5	ND		
1,1-Dichloroethane	0.25	0.50	ND	3.9	ND		
1,2-Dichloroethane (EDC)	0.25	0.50	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QC Batch Number: 10132000 / 10132000

Our Lab I.D.				AE78732	AE78733		
Client Sample I.D.			Method Blank	4928A	Trip Blank		
Date Sampled			10/09/2000	10/09/2000	10/06/2000		
Date Prepared			10/13/2000	10/13/2000	10/13/2000		
Preparation Method			5035	5035	5035		
Date Analyzed			10/13/2000	10/13/2000	10/13/2000		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethene	0.25	0.50	ND	ND	ND		
cis-1,2-Dichloroethene	0.25	0.50	ND	0.6	ND		
trans-1,2-Dichloroethene	0.25	0.50	ND	ND	ND		
1,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,3-Dichloropropane	0.25	0.50	ND	ND	ND		
2,2-Dichloropropane	0.25	0.50	ND	ND	ND		
1,1-Dichloropropene	0.25	0.50	ND	ND	ND		
cis-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
trans-1,3-Dichloropropene	0.25	0.50	ND	ND	ND		
Ethylbenzene	0.25	0.50	ND	ND	ND		
Hexachlorobutadiene	0.25	0.50	ND	ND	ND		
Isopropylbenzene	0.25	0.50	ND	ND	ND		
p-Isopropyltoluene	0.25	0.50	ND	ND	ND		
Methylene chloride (DCM)	0.5	1.0	ND	ND	ND		
Naphthalene	0.5	1.0	ND	ND	ND		
n-Propylbenzene	0.25	0.50	ND	ND	ND		
Styrene	0.25	0.50	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.25	0.50	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.25	0.50	ND	3.8	ND		
Toluene (Methyl benzene)	0.25	0.50	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.25	0.50	ND	ND	ND		
1,1,2-Trichloroethane	0.25	0.50	ND	ND	ND		
Trichloroethene	0.25	0.50	ND	0.9	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
Trichlorotrifluoroethane (Freon-113)	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.25	0.50	ND	ND	ND		
1,3,5-Trimethylbenzene	0.25	0.50	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.25	0.50	ND	ND	ND		
o-xylene	0.25	0.50	ND	ND	ND		
m,p-Xylenes	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

Our Lab I.D.				AE78732	AE78733		
Surrogates	Con.Limit		% Rec.	% Rec.	% Rec.		
Bromofluorobenzene	75-125		92	86	84		
1,2-Dichlorobenzene	75-125		93	78	88		

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200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 6
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 10092000 / 10092000

Our Lab I.D.				AE78732			
Client Sample I.D.			Method Blank	4928A			
Date Sampled			10/09/2000	10/09/2000			
Date Prepared			10/09/2000	10/09/2000			
Preparation Method			Various	Various			
Date Analyzed			10/16/2000	10/16/2000			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bicarbonate (as CaCO3)	1	2	ND	286			
Carbonate (as CaCO3)	1	2	ND	ND			
Hydroxide (as CaCO3)	1	2	ND	ND			
Total Alkalinity	1	2	ND	286			
Anions Total (meq/L)	0.01	0.01	ND	8.30			
Cations Total (meq/L)	0.01	0.01	ND	8.28			
Ion Balance (percent difference)	0.01	0.01	ND	-0.12			
pH (pH units)	0.01	0.01	ND	6.81			
Chloride (Cl), Total	0.5	1.0	ND	30			
Conductivity (umhos/cm @77F)	5	10	ND	790			
Fluoride, Total	0.1	0.2	ND	0.4			
Hardness (Ca,Mg) as CaCO3	1	2	ND	330			
Nitrate	0.05	0.10	ND	35.0			
Nitrite	0.01	0.02	ND	ND			
Sulfate	5	10	ND	55			
Surfactants (MBAS)	0.03	0.05	ND	ND			
Total Dissolved Solids	5	10	ND	501			
Aluminum	0.05	0.10	ND	0.08J			
Calcium	0.25	0.50	ND	93.9			
Copper	0.01	0.02	ND	ND			
Iron	0.03	0.05	ND	ND			
Magnesium	0.25	0.50	ND	24.2			
Manganese	0.005	0.010	ND	ND			
Potassium	0.5	1.0	ND	5.5			
Sodium	0.25	0.50	ND	32.6			
Zinc	0.01	0.03	ND	0.19			

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ANALYTICAL RESULTS

Ordered By

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 7
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 410.4, Chemical Oxygen Demand, Colorimetric, (EPA/600/R-93-100)

QUALITY CONTROL REPORT

QC Batch Number: 10162000 / 10162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Chemical Oxygen Demand	50.00	49.50	99	50.00	48.00	96	3.0	80-120	<15	

QC Batch Number: 10162000 / 10162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Chemical Oxygen Demand	ND	ND	<1	<15	100.00	104.00	104	80-120		

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ANALYTICAL RESULTS

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Site

Strathern Landfill

Telephone: (323)889-5300
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Page: 8
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 524.2, Volatile Organic Compounds by GC/MS

QUALITY CONTROL REPORT

QC Batch Number: 10132000 / 10132000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	25.00	26.00	104	25.00	26.25	105	<1	75-125	<20	
Chlorobenzene	25.00	23.25	93	25.00	23.50	94	1.1	75-125	<20	
1,1-Dichloroethene	25.00	22.25	89	25.00	23.75	95	6.5	75-125	<20	
Toluene (Methyl benzene)	25.00	21.25	85	25.00	21.50	86	1.2	75-125	<20	
LCS										
Chloroform (Trichloromethane)	25.00	26.25	105	25.00	26.75	107	1.9	75-125	<20	
Ethylbenzene	25.00	22.25	89	25.00	22.25	89	<1	75-125	<20	
1,1,1-Trichloroethane	25.00	21.75	87	25.00	22.25	89	2.3	75-125	<20	
Trichloroethene	25.00	23.75	95	25.00	24.00	96	1.0	75-125	<20	
o-Xylene	25.00	24.00	96	25.00	23.75	95	1.0	75-125	<20	
m,p-Xylenes	25.00	23.00	92	25.00	23.25	93	1.1	75-125	<20	

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern Landfill

Telephone: (323)889-5300
Attn: Bill O'Braitis

Page: 9
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: 6010BSCAN, 6010B (Cd, Cr, Pb, Ni)

QUALITY CONTROL REPORT

QC Batch Number: 10112000 / 10112000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Cadmium	1.00	0.99	99	1.00	0.98	98	1.0	80-120	<15	
Chromium	1.00	1.00	100	1.00	1.00	100	<1	80-120	<15	
Lead	1.00	1.03	103	1.00	1.02	102	<1	80-120	<15	
Nickel	1.00	0.98	98	1.00	0.97	97	1.0	80-120	<15	

QC Batch Number: 10112000 / 10112000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Cadmium	1.00	0.99	99	80-120						
Chromium	1.00	0.99	99	80-120						
Lead	1.00	1.05	105	80-120						
Nickel	1.00	0.98	98	80-120						

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ANALYTICAL RESULTS

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Site

Strathern Landfill

Telephone: (323)889-5300
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Page: 10
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QUALITY CONTROL REPORT

QC Batch Number: 10092000 / 10092000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Bicarbonate (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Carbonate (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Hydroxide (as CaCO3)	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Total Alkalinity	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
pH (pH units)								N/A	N/A	
Chloride (Cl), Total	20.00	20.00	100	20.00	20.00	100	<1	80-120	<15	
Conductivity (umhos/cm @77F)								N/A	N/A	
Fluoride, Total	3.00	2.82	94	3.00	2.82	94	<1	80-120	<15	
Hardness (Ca,Mg) as CaCO3	20.00	21.00	105	20.00	21.00	105	<1	80-120	<15	
Nitrate	0.50	0.50	100	0.50	0.49	98	2.0	80-120	<15	
Nitrite	0.20	0.21	104	0.20	0.20	102	1.9	80-120	<15	
Sulfate	20.00	19.60	98	20.00	19.40	97	1.0	80-120	<15	
Surfactants (MBAS)	0.20	0.19	97	0.20	0.19	95	2.0	80-120	<15	
Total Dissolved Solids								N/A	N/A	
Aluminum	1.00	1.03	103	1.00	1.05	105	1.9	80-120	<15	
Calcium	1.00	1.04	104	1.00	1.05	105	<1	80-120	<15	
Copper	1.00	1.00	100	1.00	0.99	99	1.0	80-120	<15	
Iron	1.00	1.06	106	1.00	1.07	107	<1	80-120	<15	
Magnesium	1.00	1.03	103	1.00	1.03	103	<1	80-120	<15	
Manganese	1.00	1.00	100	1.00	1.01	101	<1	80-120	<15	
Potassium	10.00	9.90	99	10.00	10.10	101	2.0	80-120	<15	
Sodium	1.00	1.02	102	1.00	1.02	102	<1	80-120	<15	
Zinc	1.00	0.99	99	1.00	0.98	98	1.0	80-120	<15	

QC Batch Number: 10092000 / 10092000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Bicarbonate (as CaCO3)	20.00	20.00	100	80-120						
Carbonate (as CaCO3)	20.00	20.00	100	80-120						
Hydroxide (as CaCO3)	20.00	20.00	100	80-120						

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ANALYTICAL RESULTS

Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submittd	Client
16639	10/09/2000	LC

Method: GEN.-MINERALS, General Minerals (LC List)

QC Batch Number: 10092000 / 10092000

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Total Alkalinity	20.00	20.00	100	80-120						
pH (pH units)	7.00	7.00	100	80-120						
Chloride (Cl), Total	20.00	20.00	100	80-120						
Conductivity (umhos/cm @77F)	141.30	139.89	99	80-120						
Fluoride, Total	6.00	6.12	102	80-120						
Hardness (Ca,Mg) as CaCO3	20.00	20.00	100	80-120						
Nitrate	0.50	0.51	102	80-120						
Nitrite	0.20	0.21	103	80-120						
Sulfate	20.00	19.60	98	80-120						
Surfactants (MBAS)	0.20	0.19	95	80-120						
Total Dissolved Solids	100.00	96.00	96	80-120						
Aluminum	1.00	1.10	110	80-120						
Calcium	1.00	1.01	101	80-120						
Copper	1.00	0.99	99	80-120						
Iron	1.00	1.10	110	80-120						
Magnesium	1.00	1.03	103	80-120						
Manganese	1.00	0.96	96	80-120						
Potassium	10.00	9.10	91	80-120						
Sodium	1.00	1.02	102	80-120						
Zinc	1.00	0.98	98	80-120						

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ANALYTICAL RESULTS

Ordered By

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Site

Strathern Landfill

Telephone: (323)889-5300
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Page: 12
Project ID: 70111-2-0346
Project Name: Strathern

AETL Job Number	Submitted	Client
16639	10/09/2000	LC

Method: SM-4500B, Boron, Colorimetric, Curcumin (Std. Methods; 19th ed.)

QUALITY CONTROL REPORT

QC Batch Number: 10162000 / 10162000

Analytes	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	
Boron	0.50	0.51	102	0.50	0.52	103	<1	80-120	<15	

QC Batch Number: 10162000 / 10162000

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Boron	0.2	0.2	<1	<15	0.50	0.51	102	80-120		

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Data Qualifiers and Descriptors

Data Qualifier:

B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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LAW Crandall
LAWGIBB Group Member

1999 ANNUAL REPORT
GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

Law/Crandall Project 70111-2-0346

January 25, 2000

003576

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LAW Crandall
LAWGIBB Group Member

January 25, 2000

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irving Drive, Suite 101
Burbank, California 91504

Subject: **1999 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 1999 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells were similar between the third quarter 1998 and first quarter 1999. Between the first and third quarters 1999, groundwater levels fell about 15 feet probably because of low precipitation in the southern California region during the winter and spring months. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, and total dissolved solids (TDS). Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE). However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

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Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 1999 groundwater-monitoring program. Law/Crandall collected groundwater samples in March and August of 1999 and prepared this report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. The California Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

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Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1999 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March and August 1999. Groundwater levels remained constant between August 1998 and March 1999. Between March and August 1999, groundwater levels fell about 15 feet in the monitoring wells. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for March and August. Appendix B contains these contour maps.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient across the site was 0.000972 ft/ft to the southeast in March and 0.00484 ft/ft to the south in August. Groundwater flow for March was 0.292 ft/day or 31 ft/year. In August, flow was 1.54 ft/day or 562 ft/year. At these flow velocities, it would take 3 to 4 years for groundwater to flow across the site.

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GROUNDWATER QUALITY

We measured groundwater levels and collected groundwater samples from wells 4928A and 4928B for the first quarter on March 30, 1999 and for the third quarter on August 25, 1999. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from AETL of groundwater samples collected in 1999. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 1999, the groundwater met California Drinking Water Standards for most constituents. However, levels of iron, manganese, and total dissolved solids (TDS) exceeded drinking water limits. Table 2 shows selected 1999 results compared to California Drinking Water Standards.

We believe TDS may be related to changes in groundwater levels. Since 1998/1999 precipitation levels have fell compared to 1997/1998, water levels have decreased significantly. Trends in TDS levels have shown to be lower when water elevations are down. Historically at the site, increases in TDS levels appear to coincide with higher water levels. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels remained constant, dissolved solids have consistent levels between the third quarter 1998 and first quarter 1999. Subsequently, between the first and third quarter 1999, water levels decreased approximately 15 feet and TDS levels decreased but remain above the recommended Maximum Concentration Level (MCL). The different relationship between water levels and TDS during 1999 may be related to a seasonal variation caused by the unusually low precipitation rainfall year.

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Iron levels have also decreased. Acid preservative may have been dissolving particulate metals, causing increased dissolved metals detected in the chemical analyses. Since we discontinued use of acid preservative in the sample bottles, analyzing for dissolved metals rather than total metals, iron levels have decreased below MCLs in well 4928A. However, the concentration level for iron in well 4928B is still above drinking water standards.

Manganese levels decreased in upgradient well 4928B since the first quarter of 1999. Historically, levels of manganese have shown a pattern when water elevations are up that manganese concentrations are up and down when water elevations are down, but still remains above the drinking water standard. No definite pattern with groundwater and iron or manganese concentration levels has emerged from the data obtained to date.

Nitrate levels in both upgradient and downgradient monitoring wells have fallen since 1996 and are now below the MCL. No high nitrogen containing wastes (e.g., sewage wastes) are deposited at the landfill. Therefore, as mentioned in earlier reports, we suspect another source elevated nitrate levels in both on site wells.

Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents. Figure 4 shows a Schoeller plot of inorganic laboratory results from samples collected during August of 1999. The plot shows groundwater at the site is calcium-bicarbonate water. Sodium and potassium concentrations are elevated at well 4928B that indicates that the groundwater has been "softened" at the upgradient well. The levels of sulfate are slightly higher in upgradient well 4928B. The carbonate/bicarbonate levels are higher than calcium levels in both wells, which is reflective of a slightly acidified groundwater body.

Table 2: Site Water Quality vs. California Drinking Water Standards
1999 Cumulative Data

Constituent	Recommended Maximum Concentration Level (MCL)[1]	Water Source			
		4928A (downgradient)		4928B(upgradient)	
		March	August	March	August
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	565	546	789	754
Chloride (Cl)	250	33	32	55	40
Sulfate (SO_4)	250	68	64	53	67
Nitrate (NO_3)	45	38	20	1.3	6.6
Iron (Fe)	0.3	0.18	<0.05	34.4	0.33
Manganese (Mn)	0.05	<0.01	<0.01	0.31	0.13
Zinc (Zn)	5	<0.03	0.29	4.62	1.00
Organic (µg/L)					
Trichloroethylene (TCE)	5	1.2	1.0	0.6	<0.5
Tetrachloroethylene (PCE)	5	7.2	12.1	1.8	1.9
dichlorodifluoromethane	1[2]	4.1	9.0	1.5	3.7
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	0.7	<0.5
1,1-dichloroethane (1,1-DCA)	5	4.7	3.1	1.8	0.9
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.8	0.7	<0.5	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5	<0.5	<0.5

[1] *Source: CCR, Title 22, Division 4, Chapter 15*

[2] *Action level that is established by the Department of Health Services (DHS) for chemicals for which primary MCLs have not been adopted*

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Organics

During 1999, trace amounts of trichloroethene (TCE), dichlorodifluoromethane, 1,1-dichloroethane (1,1-DCA), 1,2-dichlorobenezene (1,2-DCB), tetrachloroethene (PCE) and were detected in upgradient monitoring well 4928B. Trace amounts of dichlorodifluoromethane, 1,1-DCA, PCE, TCE, cis-1,2-dichloroethene (1,1-DCE), and trichlorofluoromethane were detected in downgradient well 4928A. Levels were below California Drinking Water Standards in upgradient well 4928B and in downgradient well 4928A, except for PCE in well 4928A. Federal government does not regulate concentration levels for dichlorodifluoromethane, therefore action levels are used since primary MCLs have not been adopted.

No definite pattern has emerged from the volatile organic sampling data. The landfill does not appear to be the source since concentrations of organics observed in samples from upgradient well 4928B in the past have tended to have higher concentrations than in samples from downgradient well 4928A. However, during 1999, the same chemical constituents have been detected in both the upgradient and downgradient wells. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels remained constant between August 1998 and March 1999. Between March and August 1999, water levels fell about 15 feet in response to low precipitation in the southern California region during the spring and summer months. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, and total dissolved solids (TDS). The different relationship between decreased water levels and TDS during 1999 may be related to a seasonal variation caused by the low rainfall during the year. Nitrate levels in upgradient and downgradient wells continue to remain below California Drinking Water Standards. No high nitrogen containing wastes (e.g., sewage wastes) are disposed at the landfill. Therefore, as mentioned in previous reports, we suspect another source elevated nitrate levels in both on site wells. Trace concentrations of several organic compounds have appeared intermittently, yet persistently, over time at both upgradient and downgradient monitoring wells. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5356.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban, Jr.
Staff Engineer

William J. O'Braitis, C.E.G. 2037
Principal Geologist

\70111\92_PROJ\20346\99\0346AR99.DOC/EA:swb
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

003584

CERTIFICATION AND DECLARATION

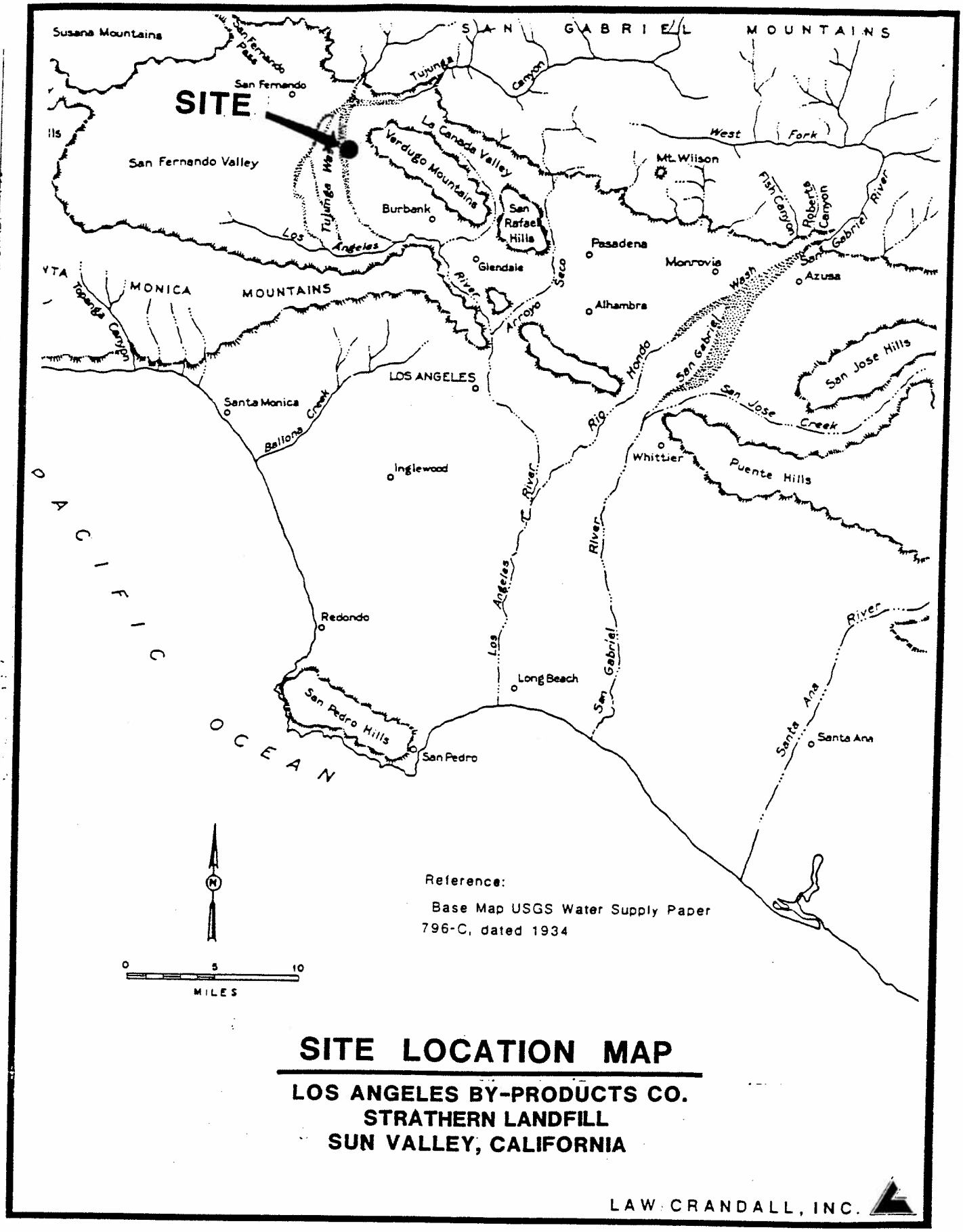
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 26th day of JANUARY, 2000. at Burbank, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

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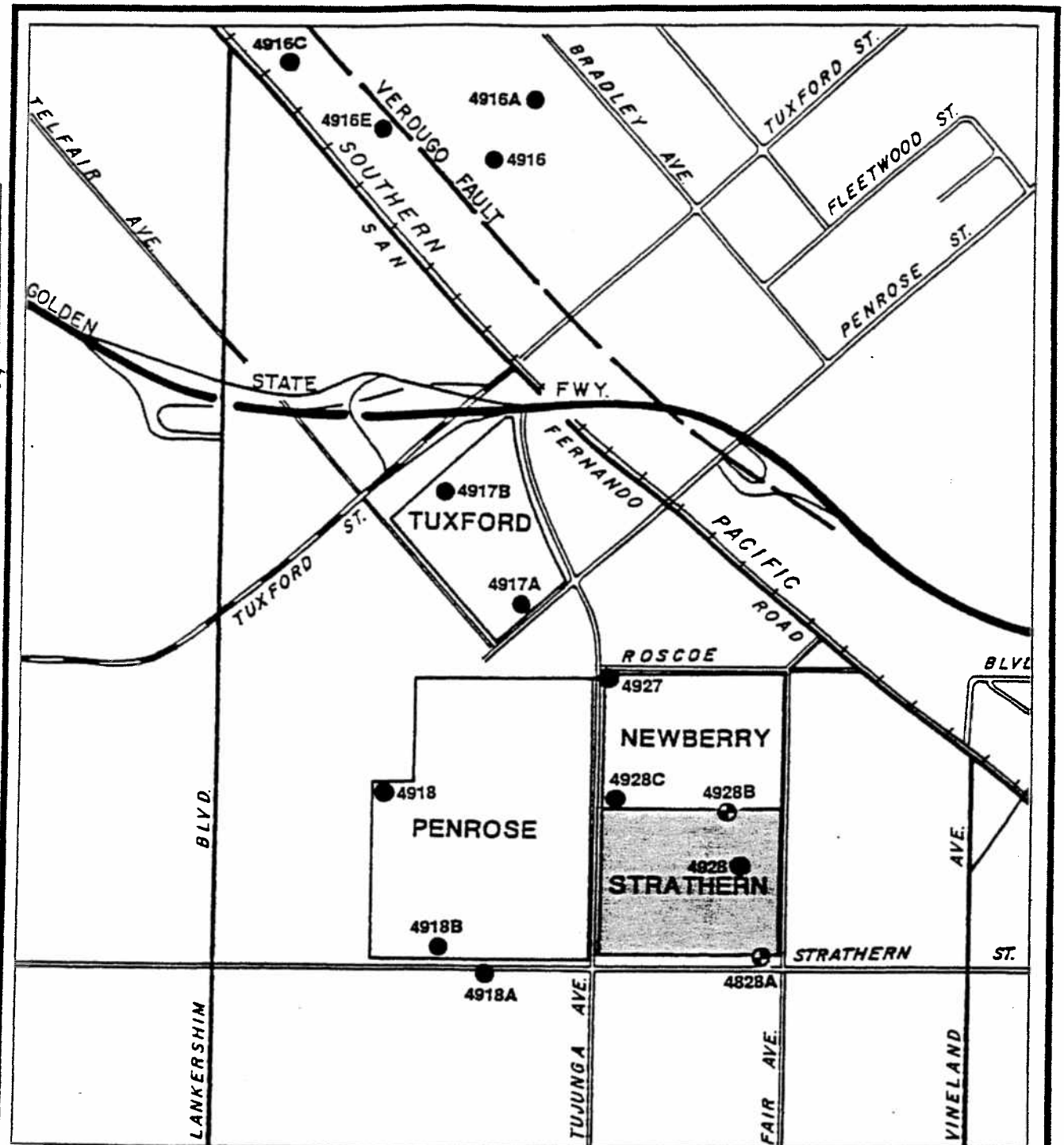

EXPLANATION:

4928 — MONITORING WELL LOCATION AND NUMBER

4828B — OTHER NEARBY MONITORING WELL

GROUND WATER SURFACE ELEVATION IN FEET ASL.

LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MONITORING WELL LOCATIONS

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

JOB [illegible] DATE 1-14-96 F.T. DR. MN O.E. [illegible] CHKD [illegible]

FIGURE 2

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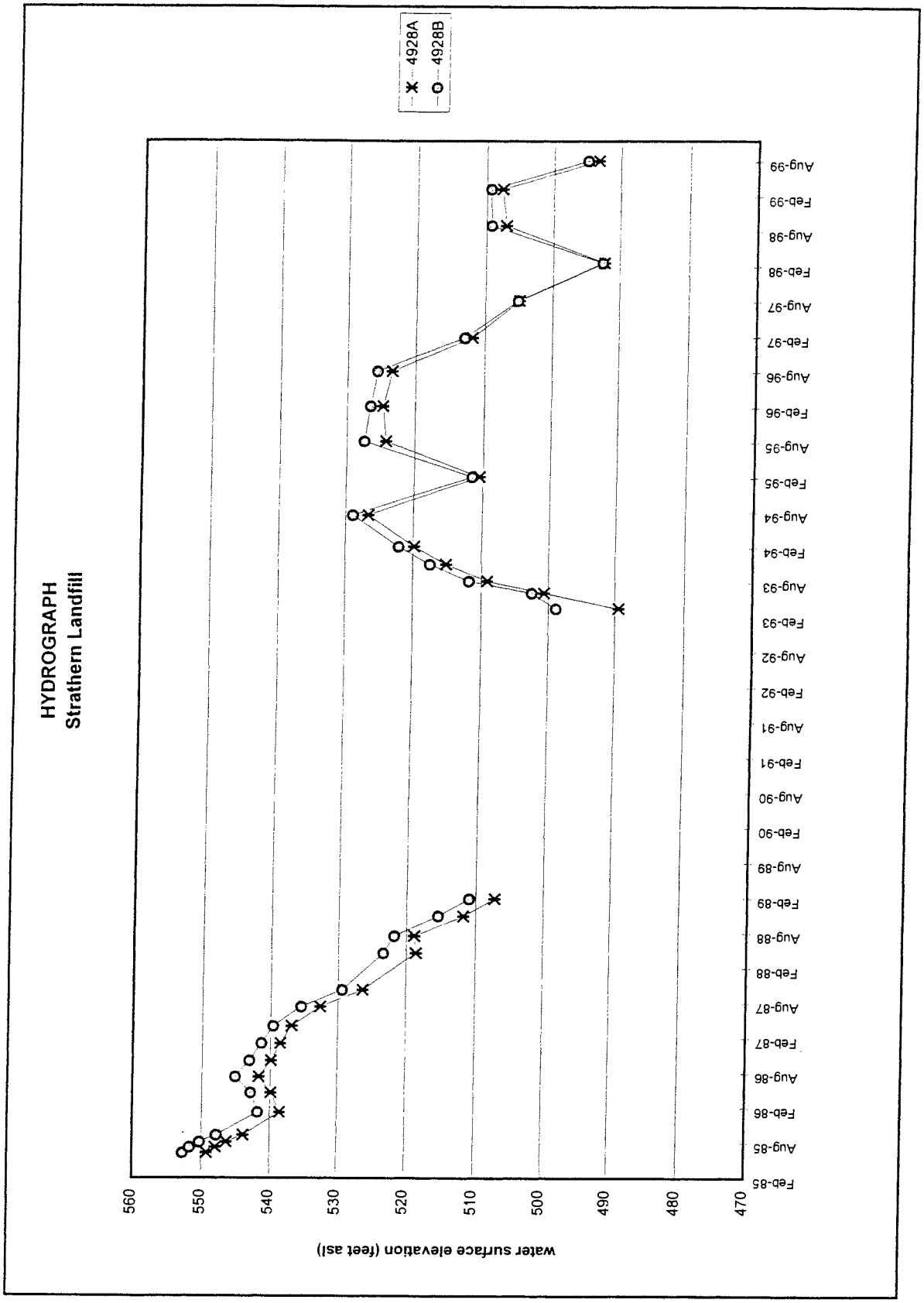

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FIGURE 3

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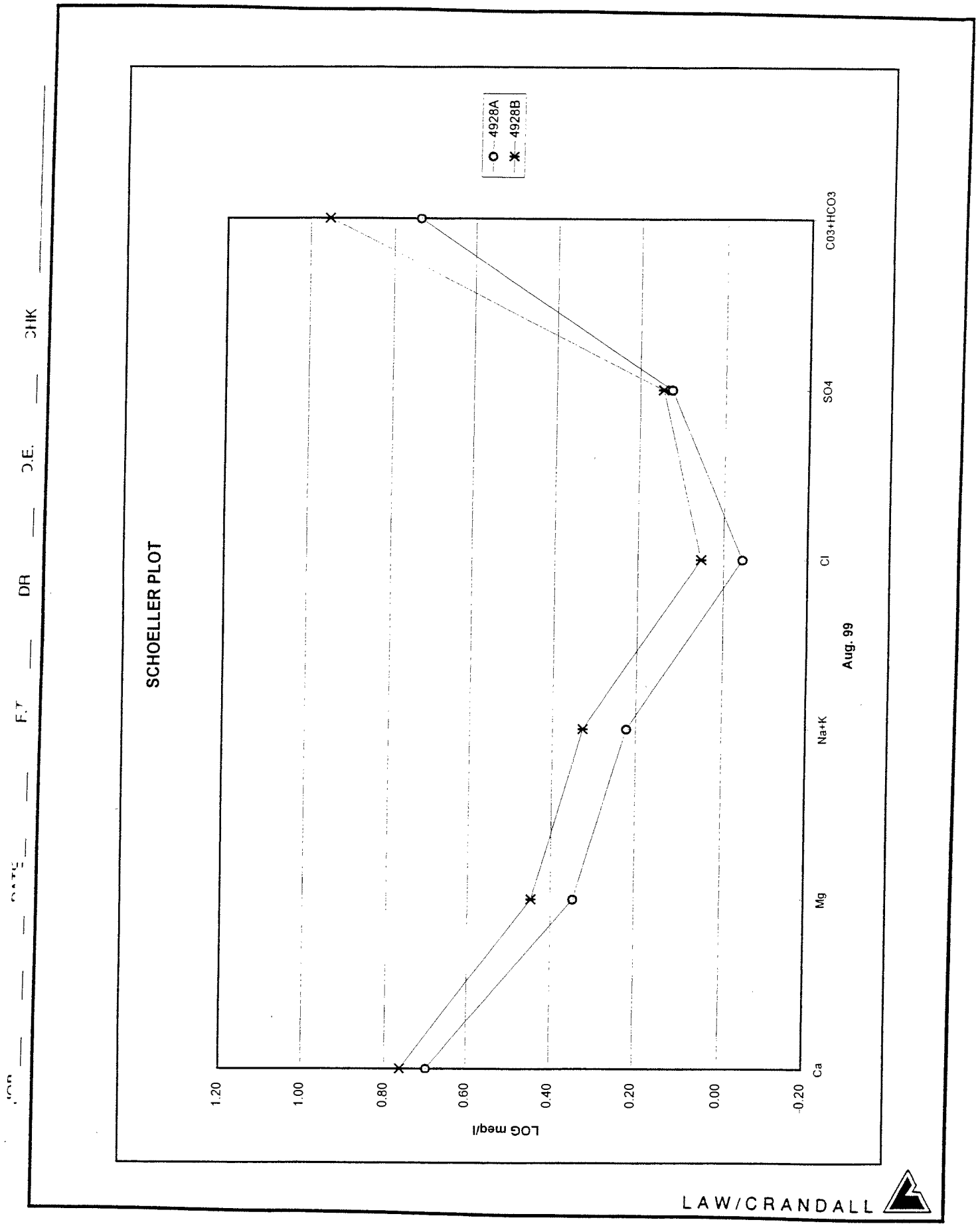

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FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB ___ DATE ___ F.T. ___ DR ___ O.E. ___ CHKD ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)			FIELD MEAS. (ppm)				LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	1.0	2.0	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	180	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	280	8.8			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.8	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	68	760	34.5	436	1300	7.7	140	34	62	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	800	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<8		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	86	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	68	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	850	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	27	34	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	785	25		816	7.0	97	25	31	5.0	<2	358	64	29	22.1	.0.4	0.40	528	<6		
4928A	30-Mar-99		507.59	7.6	70	829		378	870	7.3	96	25	33	4.9	<2.0	324	68	33	38	0.30	0.50	565	<6		
4928A	25-Aug-99		493.23	7.5	67	902	37	372	854	7.0	100	27	36	4.5	<2.0	332	64	32	20	0.30	0.40	546	<6		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

CONFIDENTIAL

JOB ___ DATE ___ F.T. ___ DP ___ O.E ___ CHI ___

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	At	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
	MCLs	5.0	5.0	0.5	6	0.5	1.0	0.1	0.05	0.005	0.05	1.0	0.3	0.002	0.05	0.015	0.1	0.05	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.60	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.50	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.20	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL
4928A	25-Aug-99	1.00	12.1	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.05		<0.01	<0.05	<0.04		0.29	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003593

CONFIDENTIAL

JOB _____ DATE _____ F.I. ___ DR. ___ O.E. ___ CHKD. ___

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft)		FIELD MEAS. (ppm)					LABORATORY ANALYSES											GENERAL MINERAL(ppm)					
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<8		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NM	595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	72	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	74	1152	NM	502	1110	7.0	97	35	81	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	70	835	NA		1020	7.1	72	22	101	7.2	<2.0	438	57	39	6.2	0.3	0.3	618	<6		
4928B	30-Mar-99		509.34	6.9	73	1381	NA	532	1310	7.13	154	<0.05	43.8	6.2	<2.0	600	53	55	1.3	0.3	0.4	789	<6.0		
4928B	25-Aug-99		494.85	7.1	78	1240	NA	628	1180	6.86	116	34	46	4.8	<2.0	548	67	40	6.6	0.3	0.3	754	<6.0		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

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JOB ___ DATE ___ FT ___ DP ___ O.E ___ CHI ___

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4926B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.6	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.96	AETL
4928B	30-Mar-99	0.6	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL
4928B	25-Aug-99	<0.5	1.9	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.33		0.13	<0.05	<0.04		1.00	AETL

NM = Not measured
NS = Not sampled

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003595

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APPENDIX B

GROUNDWATER CONTOUR MAPS

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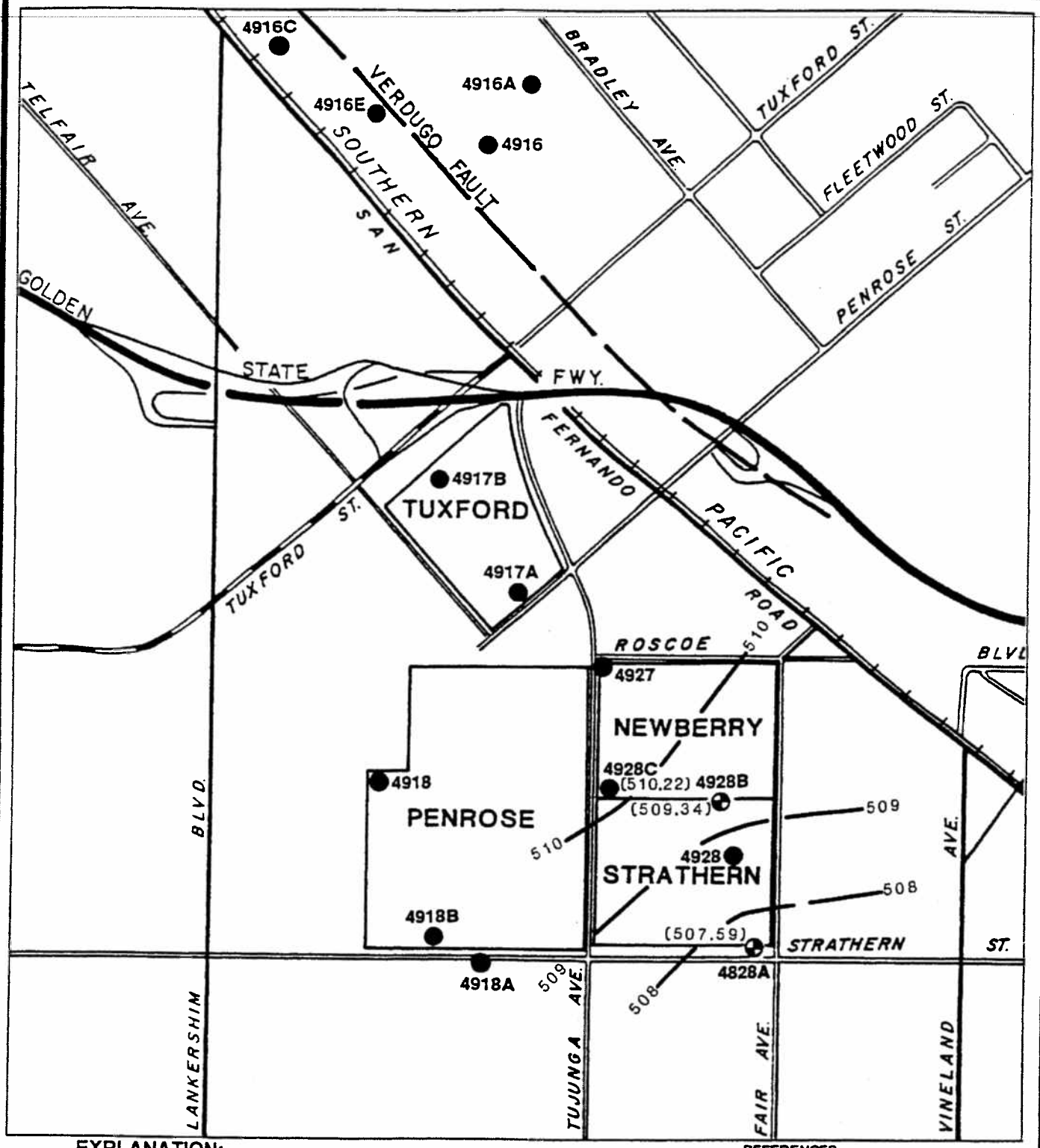

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- (507.59) — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000
SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MARCH 1999
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL

JOB 70111-2-0346.0001.000 1 DATE 4/27/99 F.T. ____ DR. todd O.E. StoAban CHKD ____

FIGURE B-1

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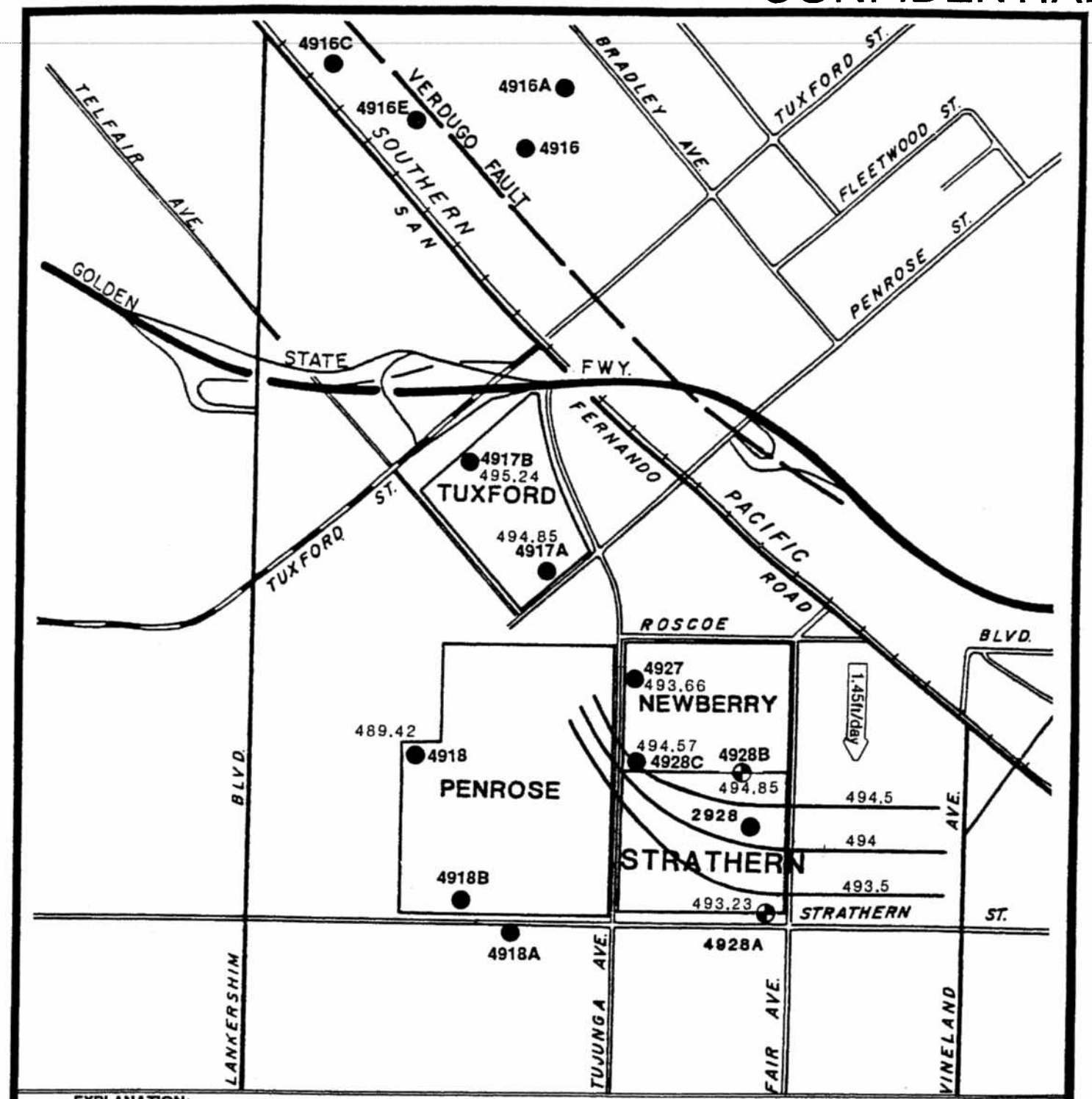

EXPLANATION:

4828A — MONITORING WELL LOCATION AND NUMBER

4917B — OTHER NEARBY MONITORING WELL

495.24 — GROUND WATER SURFACE ELEVATION IN FEET ASL

LINES OF EQUAL GROUND WATER ELEVATION

1.45ft/day — DIRECTION AND VELOCITY OF GROUND WATER FLOW

N

REFERENCES:

BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

0 1000 2000

SCALE IN FEET

AUGUST 1999

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

003598 FIGURE B-2

JOB 70111-2-0346.0001.0001 DATE 9-29-99 DR. tdd O.E. Sta Abse CHKD

FORM 120

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids, shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. The Chain of Custody Record and other pertinent forms shall accompany packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Number of Pages: 14
Date Received : 03/30/99
Date Reported : 04/14/99

Attn : Sto Aban
Phone: 323/889-5300

AETL Job Number: 12088

Project Name : Strathern
Project Number : 70111-2-0346

Site: Sun Valley

Enclosed please find results of analyses of 3 water samples which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrean

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory, Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 12088 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT: LAW CRANDALL TELEPHONE: 323-989-5300
FAX: 323-721-6700

ADDRESS: 200 CITADEL DRIVE, LOS ANGELES, CA 90040-1554

SITE: SUN VALLEY

CONTACT PERSON: STO ABAN PROJECT NAME: STRATHERN PROJECT NUMBER: 70111-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: General Minerals	Boron	COD	524.2	Cd, Cr, Ni, Pb	REMARKS
4928 A	AES8724	3/30/99	1215	Various		X					X	X	X	X	X	Filter
4928 B	AES8725	3/30/99	1148	Various		X					X	X	X	X	X	Metals
TRIP BLANK	AES8726													X		

Collected By: STO ABAN Date 3/30/99 Time 1448
Relinquished By: STO ABAN Date 3/30/99 Time 1449
Turn Around Time ☑ Normal ☐ Rush

Delivered By: Date Time
Received For Laboratory: Date 3/30/99 Time 1448

003604

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 04-06-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE58724	AE58725	AE58727
				Client ID	4928A	4928B	M. Blank
				Date Sampled	03-30-99	03-30-99	03-30-99
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	04-02-99	**324**	**600**	ND
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	**324**	**600**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	ND	ND	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	03-30-99	**380**	**640**	ND
Boron	SM4500B	mg/L	0.2	04-06-99	**0.3**	**0.3**	ND
Chemical Oxygen Demand	410.4	mg/L	6	03-30-99	ND	ND	ND
Chloride	325.3	mg/L	1	04-05-99	**33**	**55**	ND
Fluoride	340.2	mg/L	0.2	04-06-99	**0.5**	**0.4**	ND
Nitrate	352.1	mg/L	0.1	03-30-99	**38.1**	**1.3**	ND
Nitrite as N	354.1	mg/L	0.02	03-30-99	ND	**0.10**	ND
pH	150.1	std. unit	1.00	03-30-99	**7.34**	**7.13**	NA
Specific Conductance	120.1	umhos/cm	10	03-30-99	**870**	**1,310**	ND
Sulfate	375.4	mg/L	10	04-05-99	**68**	**53**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	03-30-99	ND	**0.09**	ND
Total Dissolved Solids	160.1	mg/L	10	04-01-99	**565**	**789**	ND
Anions Total	Calc.	meq/L	0.01	04-05-99	**8.30**	**12.53**	NA
Cations Total	Calc.	meq/L	0.01	04-05-99	**8.47**	**13.50**	NA
Ion Balance	Calc.	%	0.01	04-05-99	**1.01**	**3.85**	NA
Aluminum	6010	mg/L	0.1	04-02-99	ND	**0.7**	ND
Cadmium	6010	mg/L	0.005	04-02-99	ND	ND	ND
Calcium	6010	mg/L	0.5	04-02-99	**96.3**	**154**	ND
Chromium (Total)	6010	mg/L	0.01	04-02-99	ND	ND	ND
Copper	6010	mg/L	0.02	04-02-99	ND	ND	ND
Iron	6010	mg/L	0.05	04-02-99	**0.18**	**34.4**	ND
Lead	6010	mg/L	0.05	04-02-99	ND	ND	ND
Magnesium	6010	mg/L	0.5	04-02-99	**25.2**	**44.7**	ND
Manganese	6010	mg/L	0.01	04-02-99	ND	**0.31**	ND
Nickel	6010	mg/L	0.04	04-02-99	ND	ND	ND
Potassium	6010	mg/L	1.0	04-02-99	**4.9**	**6.2**	ND
Sodium	6010	mg/L	0.5	04-02-99	**32.8**	**43.8**	ND
Zinc	6010	mg/L	0.03	04-02-99	ND	**4.62**	ND

ND = Not Detected at the Detection Limit.
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 03-31-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE58724	AE58725	AE58726	AE58727
Client Sample ID		4928A	4928B	TB	M. Blank
Date Sampled		03-30-99	03-30-99	03-30-99	03-30-99
Date Extracted		03-31-99	03-31-99	03-31-99	03-31-99
Date Analyzed		03-31-99	03-31-99	03-31-99	03-31-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	**0.7**	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**4.1**	**1.5**	ND	ND
1,1-Dichloroethane	0.5	**4.7**	**1.8**	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	**0.8**	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE58724	AE58725	AE58726	AE58727
Client Sample ID		4928A	4928B	TB	M. Blank
Date Sampled		03-30-99	03-30-99	03-30-99	03-30-99
Date Extracted		03-31-99	03-31-99	03-31-99	03-31-99
Date Analyzed		03-31-99	03-31-99	03-31-99	03-31-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**7.2**	**1.8**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	**1.2**	**0.6**	ND	ND
Trichlorofluoromethane	1	ND	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 04-06-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Alkalinity Total as $CaCO_3$	310.1	04-02-99	100	100	<1.0	80	120	<15
Bicarbonate Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Hardness Total as $CaCO_3$	130.2	03-30-99	100	100	<1.0	80	120	<15
Boron	SM4500B	04-06-99	100	102	2.0	80	120	<15
Chemical Oxygen Demand	410.4	03-30-99	97	98	1.0	80	120	<15
Chloride	325.3	04-05-99	100	100	<1.0	80	120	<15
Fluoride	340.2	04-06-99	92	96	4.3	80	120	<15
Nitrate as N	352.1	03-30-99	96	96	<1.0	80	120	<15
Nitrite as N	354.1	03-30-99	105	105	<1.0	80	120	<15
Sulfate	375.4	04-05-99	105	103	1.9	80	120	<15
Surfactants(MBAS)	425.1	03-30-99	103	108	4.7	80	120	<15
Aluminum	6010	04-02-99	98	97	1.0	80	120	<15
Cadmium	6010	04-02-99	94	94	<1.0	80	120	<15
Calcium	6010	04-02-99	92	91	1.1	80	120	<15
Chromium (Total)	6010	04-02-99	96	95	1.0	80	120	<15
Copper	6010	04-02-99	94	94	<1.0	80	120	<15
Iron	6010	04-02-99	101	101	<1.0	80	120	<15
Lead	6010	04-02-99	95	92	3.2	80	120	<15
Magnesium	6010	04-02-99	94	93	1.1	80	120	<15
Manganese	6010	04-02-99	94	94	<1.0	80	120	<15
Nickel	6010	04-02-99	91	90	1.1	80	120	<15
Potassium	6010	04-02-99	83	83	<1.0	80	120	<15
Sodium	6010	04-02-99	82	81	1.2	80	120	<15
Zinc	6010	04-02-99	96	95	1.0	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 03-31-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-31-99	NA	NA
Date Analyzed		03-31-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	97	75	125
Bromobenzene	0.5	98	75	125
Bromochloromethane	0.5	97	75	125
Bromodichloromethane	0.5	102	75	125
Bromoform	0.5	96	75	125
Bromomethane	0.5	94	75	125
n-Butylbenzene	0.5	102	75	125
sec-Butylbenzene	0.5	103	75	125
tert-Butylbenzene	0.5	98	75	125
Carbon Tetrachloride	0.5	99	75	125
Chlorobenzene	0.5	98	75	125
Chloroethane	0.5	111	75	125
Chloroform	0.5	99	75	125
Chloromethane	0.5	94	75	125
2-Chlorotoluene	0.5	90	75	125
4-Chlorotoluene	0.5	97	75	125
Dibromochloromethane	0.5	96	75	125
Dibromomethane	1	100	75	125
1,2-Dibromo-3-Chloropropane	1	99	75	125
1,2-Dibromoethane	0.5	98	75	125
1,2-Dichlorobenzene	0.5	99	75	125
1,3-Dichlorobenzene	0.5	99	75	125
1,4-Dichlorobenzene	0.5	94	75	125
Dichlorodifluoromethane	0.5	115	75	125
1,1-Dichloroethane	0.5	102	75	125
1,2-Dichloroethane	0.5	97	75	125
1,1-Dichloroethene	0.5	99	75	125
cis-1,2-Dichloroethene	0.5	92	75	125
trans-1,2-Dichloroethene	0.5	95	75	125
1,2-Dichloropropane	0.5	94	75	125
1,3-Dichloropropane	0.5	104	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

EPA Method 524.2 (L/C) QA/QC DATA (Cont...)

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-31-99	NA	NA
Date Analyzed		03-31-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
2,2-Dichloropropane	0.5	90	75	125
1,1-Dichloropropene	0.5	92	75	125
cis-1,3-Dichloropropene	0.5	103	75	125
trans-1,3-Dichloropropene	0.5	102	75	125
Ethylbenzene	0.5	100	75	125
Freon 113	1	110	75	125
Hexachlorobutadiene	0.5	110	75	125
Isopropylbenzene	0.5	99	75	125
p-Isopropyltoluene	0.5	99	75	125
Methylene Chloride	1	103	75	125
Napathalene	1	96	75	125
n-Propylbenzene	0.5	99	75	125
Styrene	0.5	96	75	125
1,1,1,2-Tetrachloroethane	0.5	96	75	125
1,1,2,2-Tetrachloroethane	1	97	75	125
Tetrachloroethene	0.5	97	75	125
Toluene	0.5	99	75	125
1,2,3-Trichlorobenzene	1	105	75	125
1,2,4-Trichlorobenzene	1	105	75	125
1,1,1-Trichloroethane	0.5	98	75	125
1,1,2-Trichloroethane	0.5	98	75	125
Trichloroethene	0.5	97	75	125
Trichlorofluoromethane	1	109	75	125
1,2,3-Trichloropropane	1	100	75	125
1,2,4-Trimethylbenzene	0.5	97	75	125
1,3,5-Trimethylbenzene	0.5	96	75	125
Vinyl Chloride	0.5	102	75	125
o-Xylene	0.5	95	75	125
m & p Xylenes	1	95	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit
NS = Not Spiked
NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director

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American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/30/99	03/30/99	03/30/99	**Detection Limit**
Date Analyzed:	03/30/99	03/30/99	03/30/99	
COD	ND	ND	ND	6

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	97	98	1

003611

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: 524.2
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE58724	AE58725	AE58726	AE58727	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/31/99	03/31/99	03/31/99	03/31/99	**Detection**
Date Analyzed:	03/31/99	03/31/99	03/31/99	03/31/99	**Limit**
Acetone	ND	ND	ND	ND	1.0
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
2- Butanone	ND	ND	ND	ND	1.0
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Disulfide	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
2- Chloroethyl Vinylether	ND	ND	ND	ND	1.0
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	0.5
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	0.5
1,2- Dichlorobenzene	ND	**0.7**	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	**4.1**	**1.5**	ND	ND	0.5
1,1- Dichloroethane	**4.7**	**1.8**	ND	ND	0.5
1,2- Dichloroethane	ND	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	**0.8**	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1.0
Hexachlorobutadiene	ND	ND	ND	ND	0.5

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Units: ug/L

Lab ID: / **Sample No:**	AE58724 4928A	AE58725 4928B	AE58726 TRIP BLANK	AE58727 METHOD BLANK	**Detection Limit**
2- Hexanone	ND	ND	ND	ND	1.0
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
MTBE	ND	ND	ND	ND	1.0
4- Methyl-2-Pentanone	ND	ND	ND	ND	1.0
Methylene Chloride	ND	ND	ND	ND	1.0
Naphthalene	ND	ND	ND	ND	0.5
N- Propylbenzene	ND	ND	ND	ND	0.5
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	0.5
Tetrachloroethene	**7.2**	**1.8**	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	0.5
1,2,4- Trichlorobenzene	ND	ND	ND	ND	0.5
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	**1.2**	**0.6**	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1.0
1,2,3- Trichloropropane	ND	ND	ND	ND	0.5
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Acetate	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE58724	AE58725	AE58726	AE58727
Surrogate Percent Recovery				
Bromofluorobenzene	89	96	96	97
1,2- Dichlorobenzene-d4	84	95	94	85

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	100	92	8
Chlorobenzene	98	94	4
1,1- Dichloroethene	96	88	8
Toluene	96	90	7
Trichloroethene	97	90	8

ND - Not Detected at The Detection Limit

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2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/30/99	03/30/99	03/30/99	Detection
Date Analyzed:	04/06/99	04/06/99	04/06/99	Limit
Alkalinity by Titration				
Bicarbonate (as CaCO3)	324	600	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	324	600	ND	2
Calculation				
Anions Total (meq/L)	8.30	12.53	ND	0.01
Cations Total (meq/L)	8.47	13.50	ND	0.01
Ion Balance, (Percent)	1.01	3.85	ND	0.01
General				
Chloride (Cl), total	33	55	ND	1
Conductivity (umhos/cm @ 77F	870	1310	ND	10
Fluoride (F), total	0.5	0.4	ND	0.2
Hardness (Ca,Mg) as CaCO3	380	640	ND	2
Nitrate	38.1	1.3	ND	0.1
Nitrite (as N), total	ND	0.10	ND	0.02
PH (pH units)	7.34	7.13	ND	1.00
Sulfate (SO4)	68	53	ND	10
Surfactants (MBAS)	ND	0.09	ND	0.05
Total Dissolved Solids	565	789	ND	10
Metals				
Aluminum (Al)	ND	0.7	ND	0.1
Calcium (Ca)	96.3	154	ND	0.5
Copper (Cu)	ND	ND	ND	0.02
Iron (Fe)	0.18	34.4	ND	0.05
Magnesium (Mg)	25.2	44.7	ND	0.5
Manganese (Mn)	ND	0.31	ND	0.01
Potassium (K)	4.9	6.2	ND	1.0
Sodium (Na)	32.8	43.8	ND	0.5
Zinc (Zn)	ND	4.62	ND	0.03

(Continued)

003614

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

QUALITY CONTROL SUMMARY

Lab ID:	AE58724	AE58725	AE58727
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	92	96	4.3
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate (as N), total	96	96	<1
Nitrite (as N), total	105	105	<1
Sulfate (SO4)	105	103	1.9
Surfactants (MBAS)	103	108	4.7
Metals			
Aluminum (Al)	98	97	1
Calcium (Ca)	92	91	1.1
Copper (Cu)	94	94	<1
Iron (Fe)	101	101	<1
Magnesium (Mg)	94	93	1.1
Manganese (Mn)	94	94	<1
Potassium (K)	83	83	<1
Sodium (Na)	82	81	1.2
Zinc (Zn)	96	95	1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	04/06/99	04/06/99	04/06/99	**Detection**
Date Analyzed:	04/06/99	04/06/99	04/06/99	**Limit**
Boron (B)	**0.3**	**0.3**	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	100	102	2

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ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	04/01/99	04/01/99	04/01/99	**Detection**
Date Analyzed:	04/02/99	04/02/99	04/02/99	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	ND	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	94	94	<1
Chromium (Cr)	96	95	1
Lead (Pb)	95	92	3.2
Nickel (Ni)	91	90	1.1

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ND - Not Detected at The Detection Limit

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Number of Pages: 14
Date Received : 08/25/99
Date Reported : 09/09/99

Attn : Sto Aban
Phone: 323/889-5300

AETL Job Number: 13041

Project Name : Strathern
Project Number : 70111-2-0346

Site: Sun Valley

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joel Serrano

Approved By: C Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003613

American Environmental Testing Laboratory, Inc.
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AETL JOB# 13041 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT: Law Crandall
TELEPHONE: 323-889-5300
FAX: 323-721-6700
ADDRESS: 200 Citadel Drive, Los Angeles, CA 90040
SITE: Sun Valley
CONTACT PERSON: Sto Aban
PROJECT NAME: Strathern
PROJECT NUMBER: 70111-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: General Minerals	Boron	COD	524.2	Cd, Cr, Ni, Pb	REMARKS
4928 B	AE63427	8-25-99	1245	Various		X				ice	X	X	X	X	X	
4928 A	AE63428	8-25-99	1450	Various		X				ice	X	X	X	X	X	
Trip Blank	AE63429	8-25-99				X				ice				X		

Collected By: Sto Aban Date 8-25-99 Time 1450
Relinquished By: Sto Aban Date 8-25-99 Time 1525
Delivered By: Joe Serrano Date 8-25-99 Time 1525
Received For Laboratory: Joe Serrano Date 8-25-99 Time 1525
Turn Around Time ☑ Normal ☐ Rush

CONFIDENTIAL

00619

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SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley
DATE SAMPLED: 08-25-99
DATE SUBMITTED: 08-25-99
DATE ANALYSIS COMPLETED: 09-07-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE63427	AE63428	AE63430
				Client ID	4928B	4928A	M. Blank
				Date Sampled	08-25-99	08-25-99	08-25-99
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	08-27-99	**548**	**332**	ND
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	08-27-99	**548**	**332**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	08-27-99	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	08-27-99	ND	ND	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	08-30-99	**554**	**556**	ND
Boron	SM4500B	mg/L	0.2	08-30-99	**0.3**	**0.3**	ND
Chemical Oxygen Demand	410.4	mg/L	6	08-26-99	ND	ND	ND
Chloride	325.3	mg/L	1	08-26-99	**40**	**32**	ND
Fluoride	340.2	mg/L	0.2	08-30-99	**0.3**	**0.4**	ND
Nitrate	352.1	mg/L	0.1	08-26-99	**6.6**	**20.4**	ND
Nitrite	354.1	mg/L	0.02	08-26-99	**0.2**	ND	ND
pH	150.1	std. unit	1.00	08-25-99	**6.86**	**7.00**	NA
Specific Conductance	120.1	umhos/cm	10	08-30-99	**1,180**	**854**	ND
Sulfate	375.4	mg/L	10	08-25-99	**67**	**64**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	08-26-99	**0.08**	**0.09**	ND
Total Dissolved Solids	160.1	mg/L	10	08-27-99	**754**	**546**	ND
Anions Total	Calc.	meq/L	0.01	08-30-99	**11.64**	**8.02**	NA
Cations Total	Calc.	meq/L	0.01	08-30-99	**10.80**	**8.91**	NA
Ion Balance	Calc.	%	0.01	08-30-99	**3.57**	**5.26**	NA
Aluminum	6010	mg/L	0.1	09-07-99	ND	ND	ND
Cadmium	6010	mg/L	0.005	09-07-99	ND	ND	ND
Calcium	6010	mg/L	0.5	09-07-99	**116**	**100**	ND
Chromium (Total)	6010	mg/L	0.01	09-07-99	ND	ND	ND
Copper	6010	mg/L	0.02	09-07-99	ND	ND	ND
Iron	6010	mg/L	0.05	09-07-99	**0.33**	ND	ND
Lead	6010	mg/L	0.05	09-07-99	ND	ND	ND
Magnesium	6010	mg/L	0.5	09-07-99	**34.0**	**27.0**	ND
Manganese	6010	mg/L	0.01	09-07-99	**0.13**	ND	ND
Nickel	6010	mg/L	0.04	09-07-99	ND	ND	ND
Potassium	6010	mg/L	1.0	09-07-99	**4.8**	**4.5**	ND
Sodium	6010	mg/L	0.5	09-07-99	**46.0**	**35.7**	ND
Zinc	6010	mg/L	0.03	09-07-99	**1.00**	**0.29**	ND

ND = Not Detected at the Detection Limit.
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley
DATE SAMPLED: 08-25-99
DATE SUBMITTED: 08-25-99
DATE ANALYSIS COMPLETED: 09-01-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE63427	AE63428	AE63429	AE63430
Client Sample ID		4928B	4928A	TB	M. Blank
Date Sampled		08-25-99	08-25-99	08-25-99	08-25-99
Date Extracted		09-01-99	09-01-99	09-01-99	09-01-99
Date Analyzed		09-01-99	09-01-99	09-01-99	09-01-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**3.7**	**9.0**	ND	ND
1,1-Dichloroethane	0.5	**0.9**	**3.1**	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	**0.7**	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE63427	AE63428	AE63429	AE63430
Client Sample ID		4928B	4928A	TB	M. Blank
Date Sampled		08-25-99	08-25-99	08-25-99	08-25-99
Date Extracted		09-01-99	09-01-99	09-01-99	09-01-99
Date Analyzed		09-01-99	09-01-99	09-01-99	09-01-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**1.9**	**12.1**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	ND	**1.0**	ND	ND
Trichlorofluoromethane	1	ND	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = **N**ot **D**etected at the Detection Limit
DL = **D**etection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley
DATE SAMPLED: 08-25-99
DATE SUBMITTED: 08-25-99
DATE ANALYSIS COMPLETED: 09-07-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	Method	Date Analyzed	Results	Results	Results	Results	Results	Results
Alkalinity Total as $CaCO_3$	310.1	08-27-99	100	100	<1.0	80	120	<15
Bicarbonate Alk. as $CaCO_3$	SM2320B	08-27-99	100	100	<1.0	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	08-27-99	100	100	<1.0	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	08-27-99	100	100	<1.0	80	120	<15
Hardness Total as $CaCO_3$	130.2	08-30-99	100	100	<1.0	80	120	<15
Boron	SM4500B	08-30-99	104	102	1.9	80	120	<15
Chemical Oxygen Demand	410.4	08-26-99	102	101	<1.0	80	120	<15
Chloride	325.3	08-26-99	100	105	4.9	80	120	<15
Fluoride	340.2	08-30-99	99	99	<1.0	80	120	<15
Nitrate	352.1	08-26-99	98	99	1.0	80	120	<15
Nitrite	354.1	08-26-99	98	99	1.0	80	120	<15
Sulfate	375.4	08-25-99	99	96	3.1	80	120	<15
Surfactants(MBAS)	425.1	08-26-99	92	94	2.2	80	120	<15
Aluminum	6010	09-07-99	107	109	1.9	80	120	<15
Cadmium	6010	09-07-99	98	97	1.0	80	120	<15
Calcium	6010	09-07-99	90	80	11.7	80	120	<15
Chromium (Total)	6010	09-07-99	97	97	<1.0	80	120	<15
Copper	6010	09-07-99	97	97	<1.0	80	120	<15
Iron	6010	09-07-99	100	99	1.0	80	120	<15
Lead	6010	09-07-99	96	94	2.1	80	120	<15
Magnesium	6010	09-07-99	96	96	<1.0	80	120	<15
Manganese	6010	09-07-99	96	94	2.1	80	120	<15
Nickel	6010	09-07-99	96	94	2.1	80	120	<15
Potassium	6010	09-07-99	94	96	2.1	80	120	<15
Sodium	6010	09-07-99	90	80	11.7	80	120	<15
Zinc	6010	09-07-99	100	98	2.0	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley
DATE SAMPLED: 08-25-99
DATE SUBMITTED: 08-25-99
DATE ANALYSIS COMPLETED: 09-01-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		09-01-99	NA	NA
Date Analyzed		09-01-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	95	75	125
Bromobenzene	0.5	102	75	125
Bromochloromethane	0.5	99	75	125
Bromodichloromethane	0.5	101	75	125
Bromoform	0.5	106	75	125
Bromomethane	0.5	101	75	125
n-Butylbenzene	0.5	92	75	125
sec-Butylbenzene	0.5	91	75	125
tert-Butylbenzene	0.5	92	75	125
Carbon Tetrachloride	0.5	103	75	125
Chlorobenzene	0.5	100	75	125
Chloroethane	0.5	95	75	125
Chloroform	0.5	87	75	125
Chloromethane	0.5	96	75	125
2-Chlorotoluene	0.5	98	75	125
4-Chlorotoluene	0.5	95	75	125
Dibromochloromethane	0.5	97	75	125
Dibromomethane	1	110	75	125
1,2-Dibromo-3-Chloropropane	1	92	75	125
1,2-Dibromoethane	0.5	101	75	125
1,2-Dichlorobenzene	0.5	105	75	125
1,3-Dichlorobenzene	0.5	100	75	125
1,4-Dichlorobenzene	0.5	97	75	125
Dichlorodifluoromethane	0.5	105	75	125
1,1-Dichloroethane	0.5	80	75	125
1,2-Dichloroethane	0.5	90	75	125
1,1-Dichloroethene	0.5	87	75	125
cis-1,2-Dichloroethene	0.5	83	75	125
trans-1,2-Dichloroethene	0.5	85	75	125
1,2-Dichloropropane	0.5	85	75	125
1,3-Dichloropropane	0.5	105	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 13041

EPA Method 524.2 (L/C) QA/QC DATA (Cont...)

QC		LCS	LCS LCL	LCS UCL
Date Extracted		09-01-99	NA	NA
Date Analyzed		09-01-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
2,2-Dichloropropane	0.5	77	75	125
1,1-Dichloropropene	0.5	95	75	125
cis-1,3-Dichloropropene	0.5	61	75	125
trans-1,3-Dichloropropene	0.5	97	75	125
Ethylbenzene	0.5	95	75	125
Freon 113	1	89	75	125
Hexachlorobutadiene	0.5	103	75	125
Isopropylbenzene	0.5	94	75	125
p-Isopropyltoluene	0.5	91	75	125
Methylene Chloride	1	88	75	125
Napathalene	1	109	75	125
n-Propylbenzene	0.5	94	75	125
Styrene	0.5	94	75	125
1,1,1,2-Tetrachloroethane	0.5	100	75	125
1,1,2,2-Tetrachloroethane	1	94	75	125
Tetrachloroethene	0.5	100	75	125
Toluene	0.5	95	75	125
1,2,3-Trichlorobenzene	1	111	75	125
1,2,4-Trichlorobenzene	1	80	75	125
1,1,1-Trichloroethane	0.5	99	75	125
1,1,2-Trichloroethane	0.5	83	75	125
Trichloroethene	0.5	85	75	125
Trichlorofluoromethane	1	104	75	125
1,2,3-Trichloropropane	1	61	75	125
1,2,4-Trimethylbenzene	0.5	95	75	125
1,3,5-Trimethylbenzene	0.5	95	75	125
Vinyl Chloride	0.5	120	75	125
o-Xylene	0.5	93	75	125
m & p Xylenes	1	93	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit
NS = Not Spiked
NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE63427	AE63428	AE63430	
Sample No:	4928B	4928A	METHOD BLANK	
Date Sampled:	08/25/99	08/25/99	08/25/99	
Date Extracted:	08/26/99	08/26/99	08/26/99	**Detection**
Date Analyzed:	08/26/99	08/26/99	08/26/99	**Limit**
COD	ND	ND	ND	6

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	102	101	<1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: (524.2)
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE63427	AE63428	AE63429	AE63430	
Sample No:	4928B	4928A	TRIP BLANK	METHOD BLANK	
Date Sampled:	08/25/99	08/25/99	08/25/99	08/25/99	
Date Extracted:	09/01/99	09/01/99	09/01/99	09/01/99	**Detection**
Date Analyzed:	09/01/99	09/01/99	09/01/99	09/01/99	**Limit**
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	1
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	1
1,2- Dichlorobenzene	ND	ND	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	3.7	9.0	ND	ND	0.5
1,1- Dichloroethane	0.9	3.1	ND	ND	0.5
1,2- Dichloroethane	ND	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	ND	0.7	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1
Hexachlorobutadiene	ND	ND	ND	ND	0.5
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
Methylene Chloride	ND	ND	ND	ND	1
Naphthalene	ND	ND	ND	ND	1

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Units: ug/L

Lab ID: / **Sample No:**	AE63427 4928B	AE63428 4928A	AE63429 TRIP BLANK	AE63430 METHOD BLANK	**Detection Limit**
N- Propylbenzene	ND	ND	ND	ND	0.5
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	1
Tetrachloroethene	**1.9**	**12.1**	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	1
1,2,4- Trichlorobenzene	ND	ND	ND	ND	1
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	ND	**1.0**	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1
1,2,3- Trichloropropane	ND	ND	ND	ND	1
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1

QUALITY CONTROL SUMMARY

Lab ID:	AE63427	AE63428	AE63429	AE63430
Surrogate Percent Recovery				
Bromofluorobenzene	75	89	86	88
1,2- Dichlorobenzene-d4	96	117	108	119

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	95	96	1
Chlorobenzene	99	101	2
1,1- Dichloroethene	87	86	2
Toluene	98	95	3
Trichloroethene	87	85	2

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE63427	AE63428	AE63430	
Sample No:	4928B	4928A	METHOD BLANK	
Date Sampled:	08/25/99	08/25/99	08/25/99	
Date Extracted:	08/25/99	08/25/99	08/25/99	
Date Analyzed:	09/07/99	09/07/99	09/07/99	Detection Limit
Alkalinity by Titration				
Bicarbonate (as CaCO3)	548	332	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	548	332	ND	2
Calculation				
Anions Total (meq/L)	11.64	8.02	ND	0.01
Cations Total (meq/L)	10.80	8.91	ND	0.01
Ion Balance, (Percent)	3.57	5.26	ND	0.01
General				
Chloride (Cl), total	40	32	ND	1
Conductivity (umhos/cm @ 77F	1180	854	ND	10
Fluoride (F), total	0.3	0.4	ND	0.2
Hardness (Ca,Mg) as CaCO3	554	556	ND	2
Nitrate, total	6.6	20.4	ND	0.1
Nitrite, total	0.2	ND	ND	0.02
PH (pH units)	6.86	7.00	ND	1.00
Sulfate (SO4)	67	64	ND	10
Surfactants (MBAS)	0.08	0.09	ND	0.05
Total Dissolved Solids	754	546	ND	10
Metals				
Aluminum (Al)	ND	ND	ND	0.1
Calcium (Ca)	116	100	ND	0.5
Copper (Cu)	ND	ND	ND	0.02
Iron (Fe)	0.33	ND	ND	0.05
Magnesium (Mg)	34.0	27.0	ND	0.5
Manganese (Mn)	0.13	ND	ND	0.01
Potassium (K)	4.8	4.5	ND	1.0
Sodium (Na)	46.0	35.7	ND	0.5
Zinc (Zn)	1.00	0.29	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

093629

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ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

QUALITY CONTROL SUMMARY

Lab ID:	AE63427	AE63428	AE63430
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	105	4.9
Fluoride (F), total	99	99	<1
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate (as N), total	98	99	1
Nitrite (as N), total	104	104	<1
Sulfate (SO4)	99	96	3.1
Surfactants (MBAS)	92	94	2.2
Metals			
Aluminum (Al)	107	109	1.9
Calcium (Ca)	90	80	11.7
Copper (Cu)	97	97	<1
Iron (Fe)	100	99	1
Magnesium (Mg)	96	96	<1
Manganese (Mn)	96	94	2.1
Potassium (K)	94	96	2.1
Sodium (Na)	90	80	11.7
Zinc (Zn)	100	98	2

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE63427	AE63428	AE63430	
Sample No:	4928B	4928A	METHOD BLANK	
Date Sampled:	08/25/99	08/25/99	08/25/99	
Date Extracted:	08/30/99	08/30/99	08/30/99	**Detection**
Date Analyzed:	08/30/99	08/30/99	08/30/99	**Limit**
Boron (B)	**0.3**	**0.3**	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	104	102	1.9

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 13041
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE63427	AE63428	AE63430	
Sample No:	4928B	4928A	METHOD BLANK	
Date Sampled:	08/25/99	08/25/99	08/25/99	
Date Extracted:	09/01/99	09/01/99	09/01/99	**Detection**
Date Analyzed:	09/07/99	09/07/99	09/07/99	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	ND	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

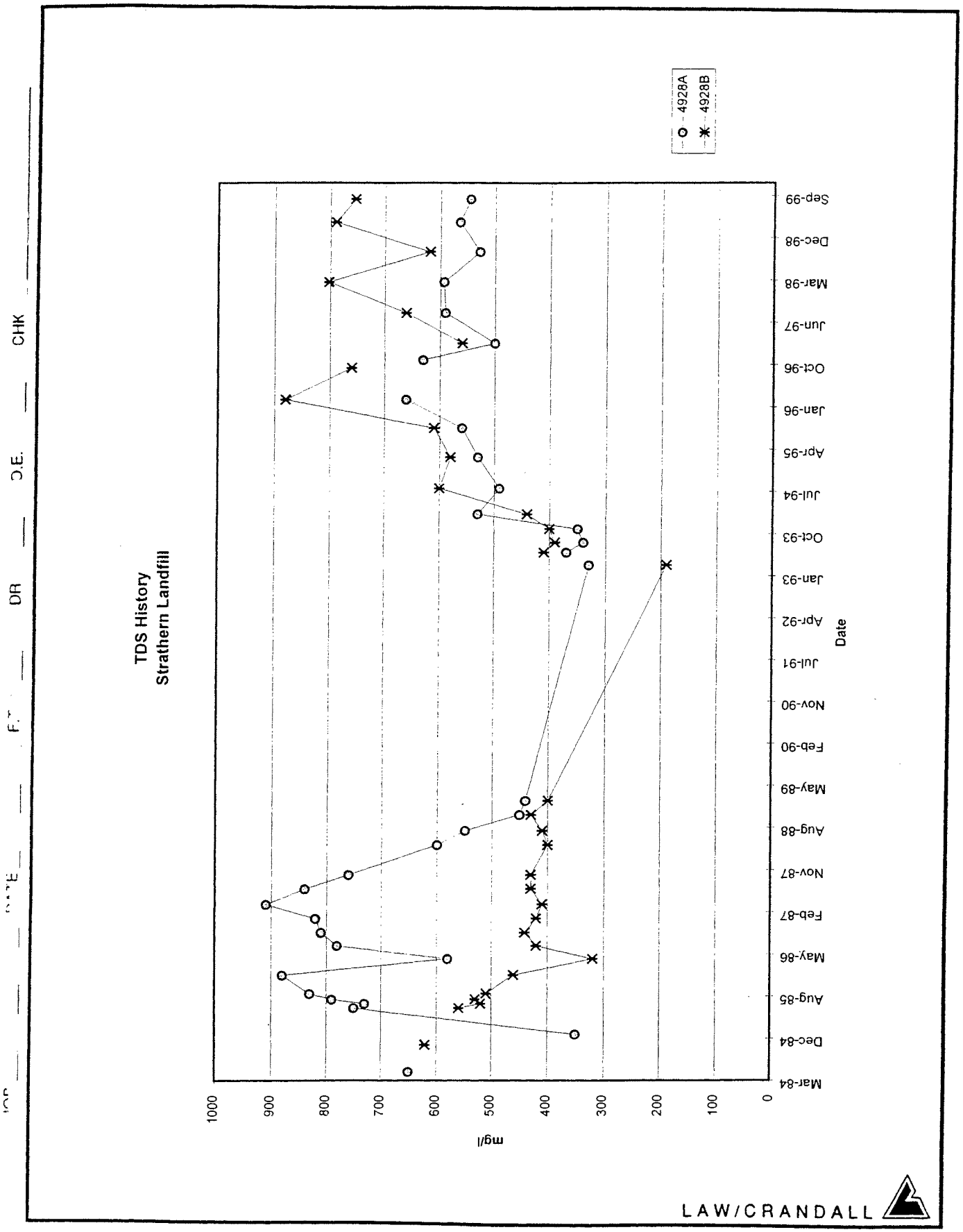
QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	98	97	1
Chromium (Cr)	97	97	<1
Lead (Pb)	96	94	2.1
Nickel (Ni)	96	94	2.1

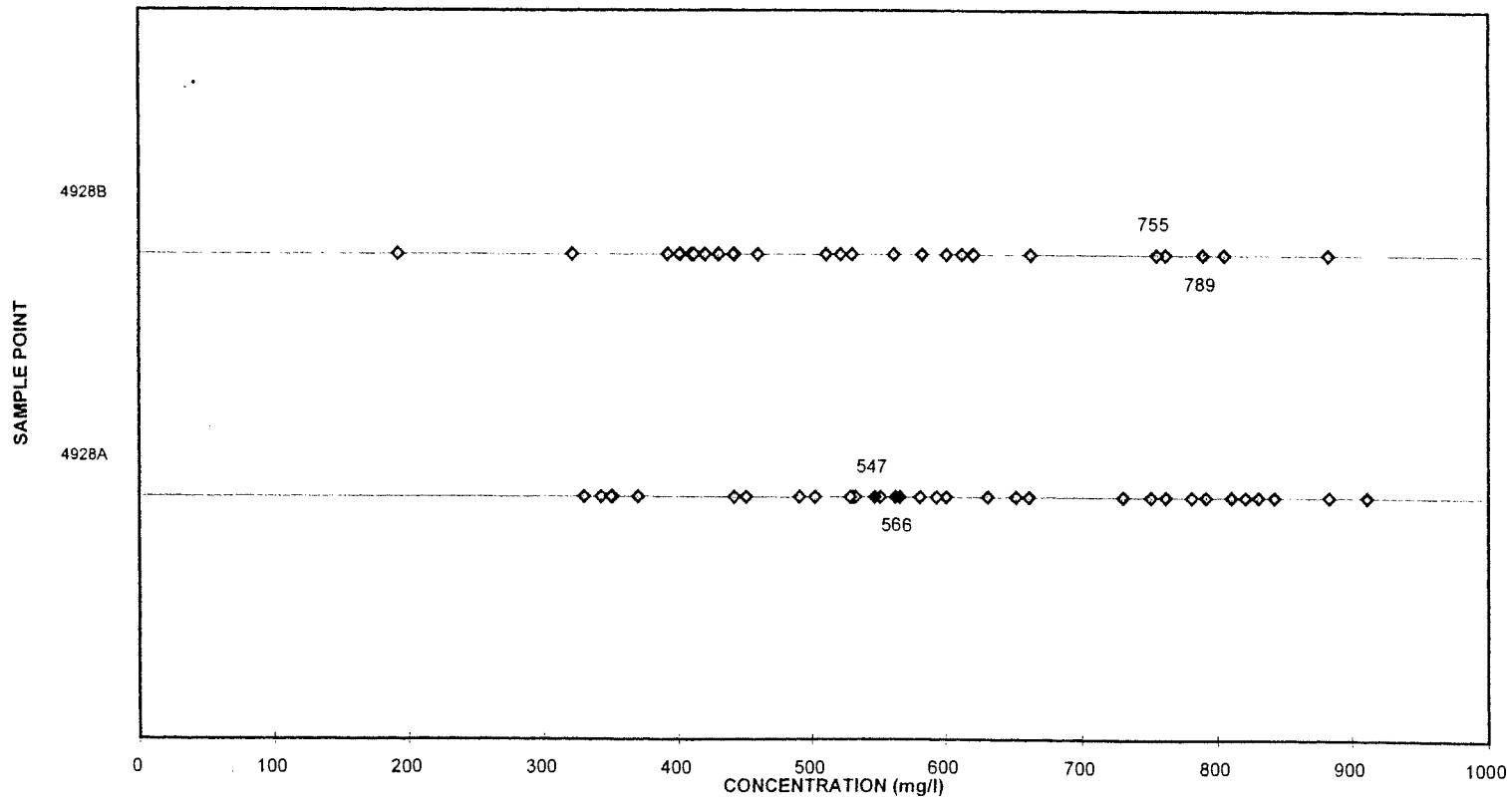
ND - Not Detected at The Detection Limit

APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS


TDS History
Strathern Landfill
4928A
4928B
mg/l
1000
900
800
700
600
500
400
300
200
100
0
Mar-84
Dec-84
Aug-85
May-86
Feb-87
Nov-87
Aug-88
May-89
Feb-90
Nov-90
Jul-91
Apr-92
Jan-93
Oct-93
Jul-94
Apr-95
Jan-96
Oct-96
Jun-97
Mar-98
Dec-98
Sep-99
Date
LAW/CRANDALL

TDS
Statistical Distribution



Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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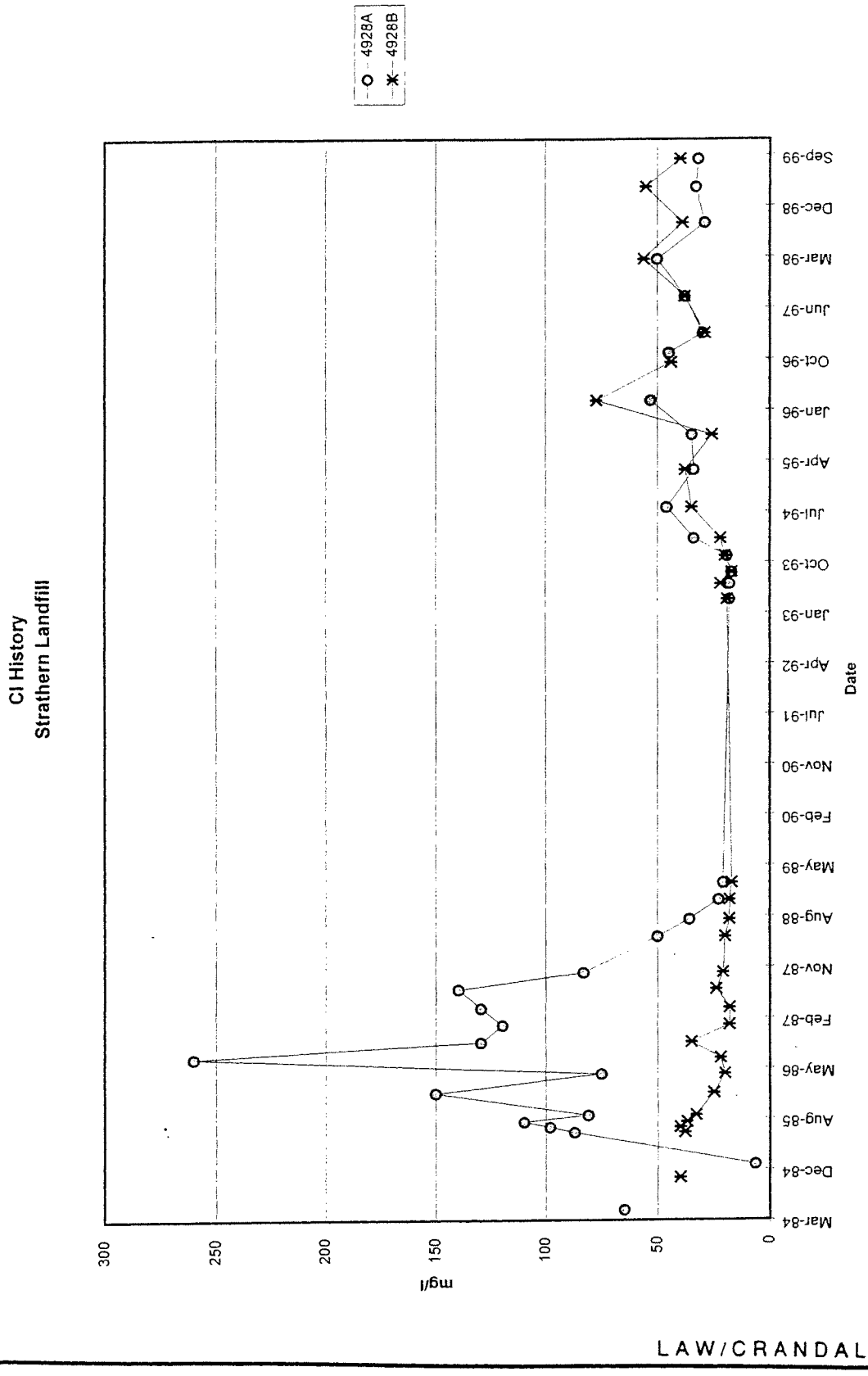
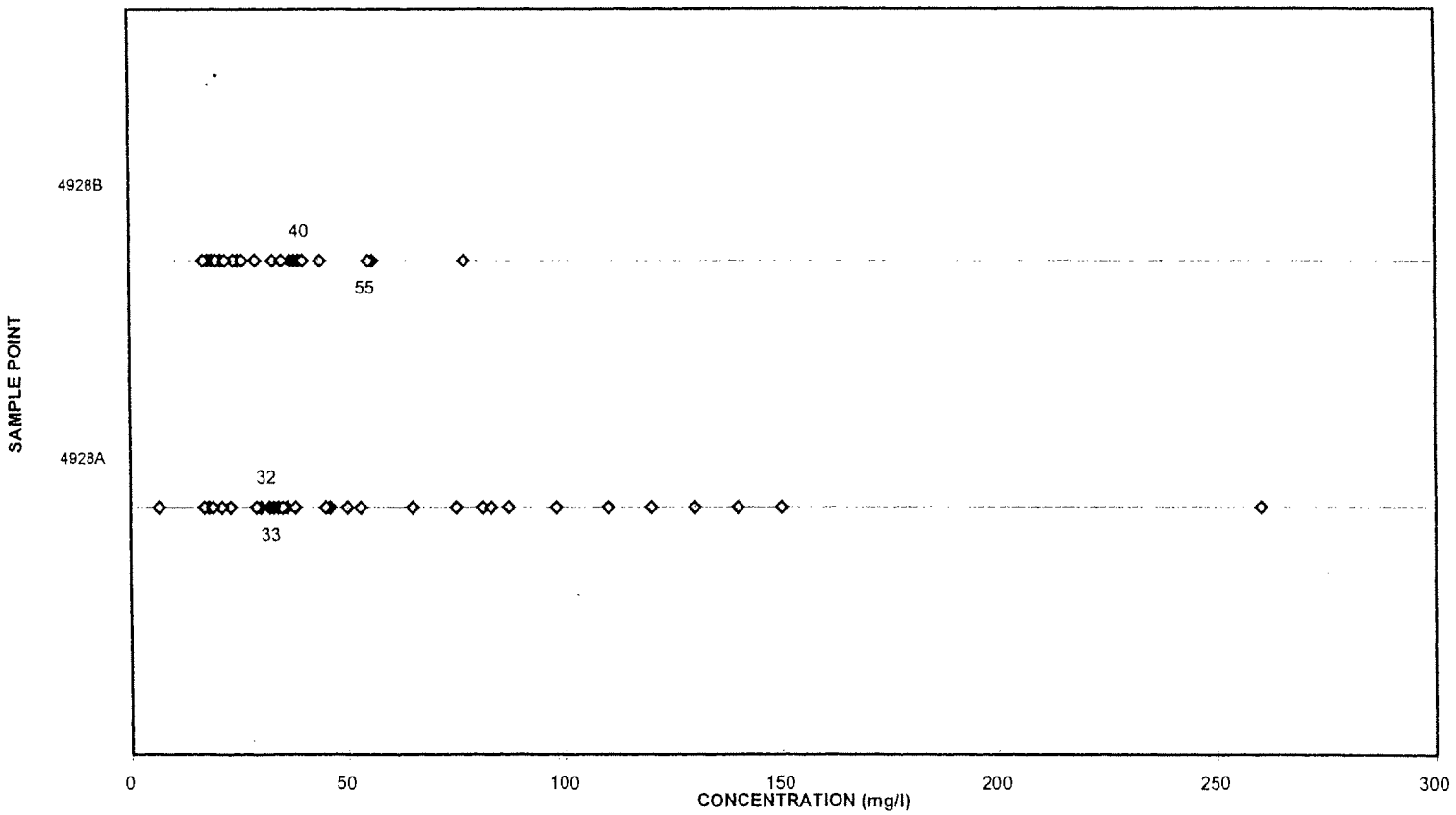

Cl History
Strathern Landfill
4928A
4928B
mg/l
300
250
200
150
100
50
0
Mar-84
Dec-84
Aug-85
May-86
Feb-87
Nov-87
Aug-88
May-89
Feb-90
Nov-90
Jul-91
Apr-92
Jan-93
Oct-93
Jul-94
Apr-95
Jan-96
Oct-96
Jun-97
Mar-98
Dec-98
Sep-99
Date
LAW/CRANDALL

JOB ___ DATE ___ DF ___ O.E ___ CHI ___

Cl
Statistical Distribution



Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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003637

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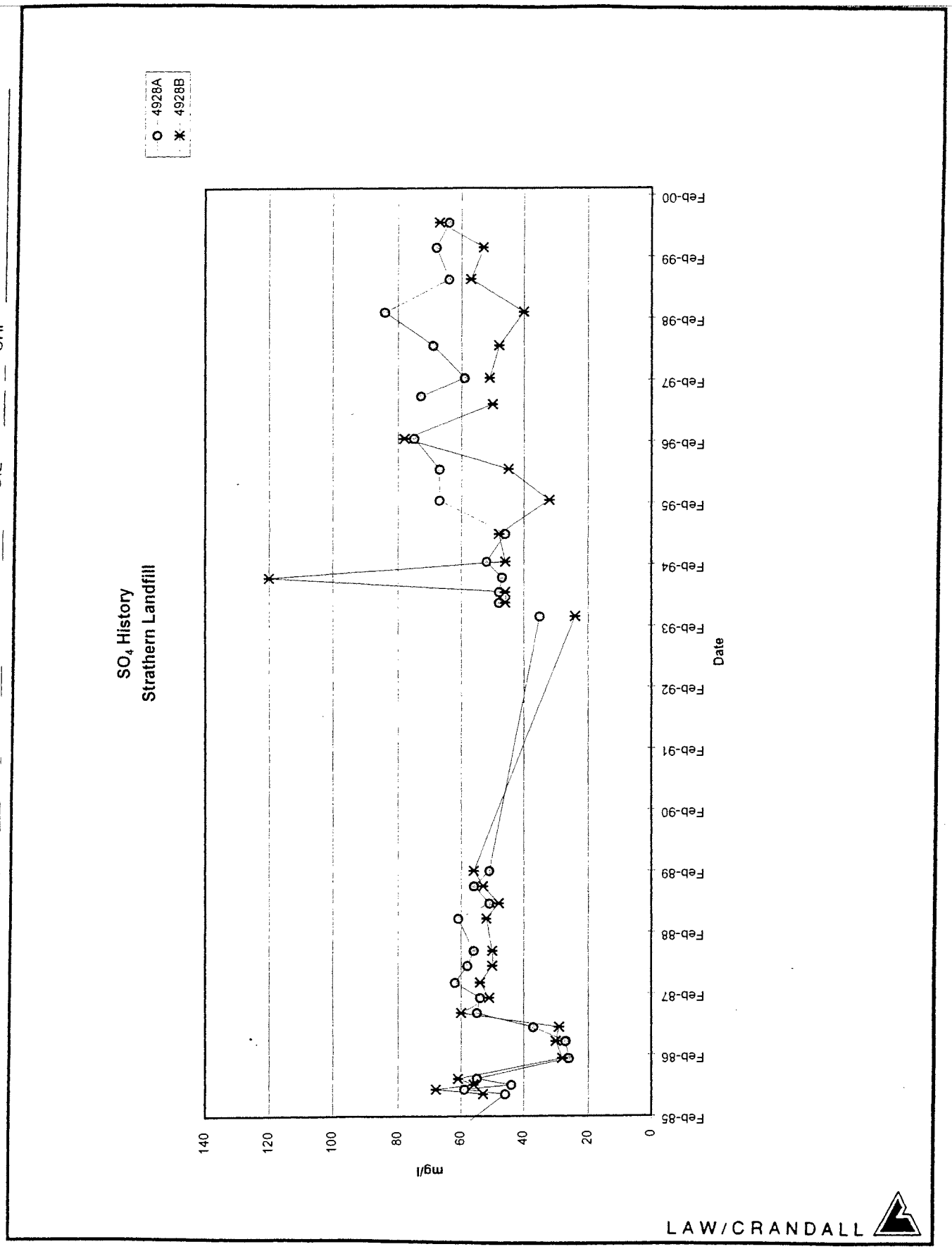
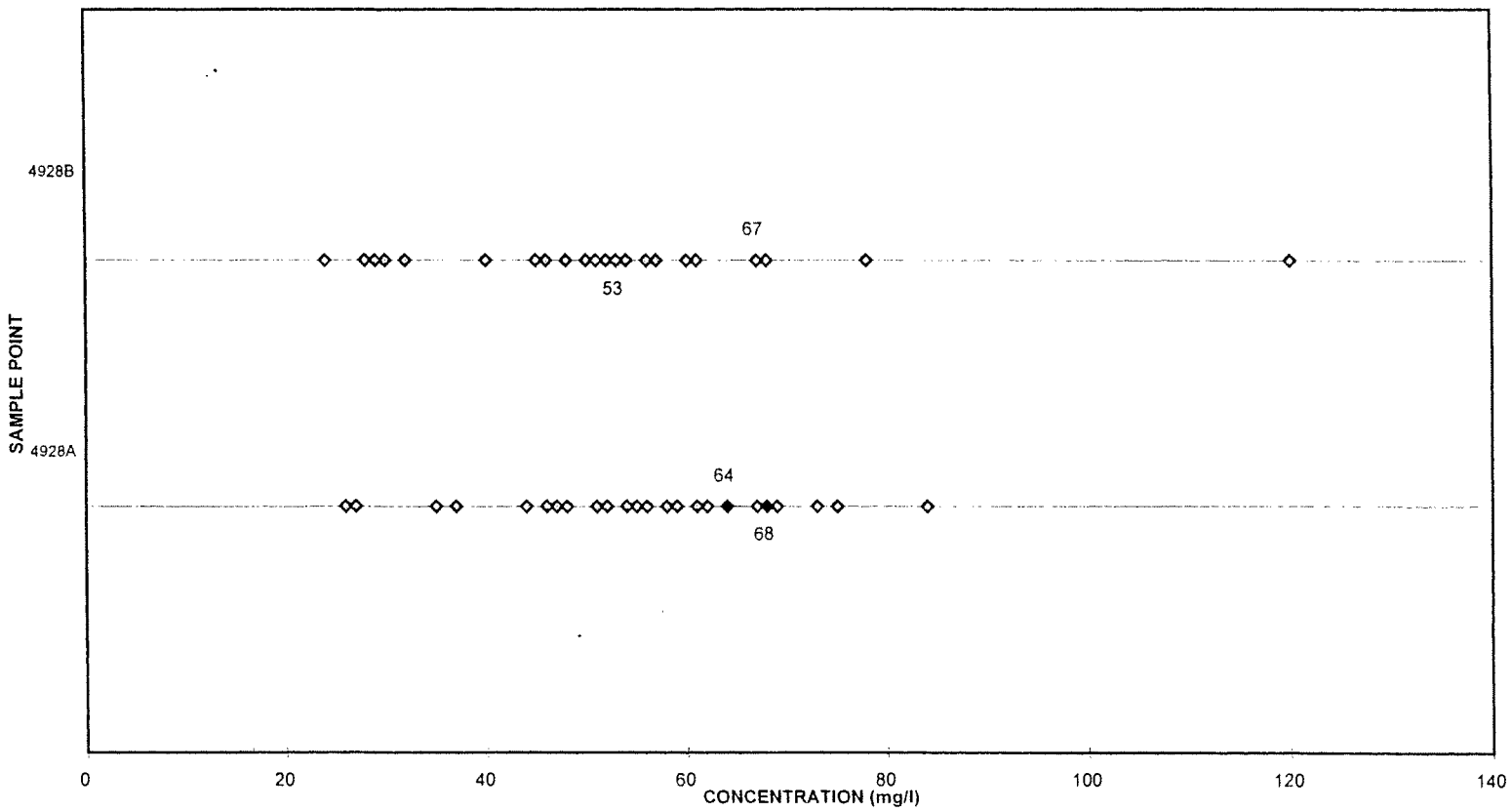

4928A
4928B
SO_4 History
Strathern Landfill
mg/l
Date
140
120
100
80
60
40
20
0
Feb-85
Feb-86
Feb-87
Feb-88
Feb-89
Feb-90
Feb-91
Feb-92
Feb-93
Feb-94
Feb-95
Feb-96
Feb-97
Feb-98
Feb-99
Feb-00
LAW/CRANDALL

JOB ___ DATE ___ F ___ DF ___ O.E ___ CHI ___

SO_4
Statistical Distribution



Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

003639

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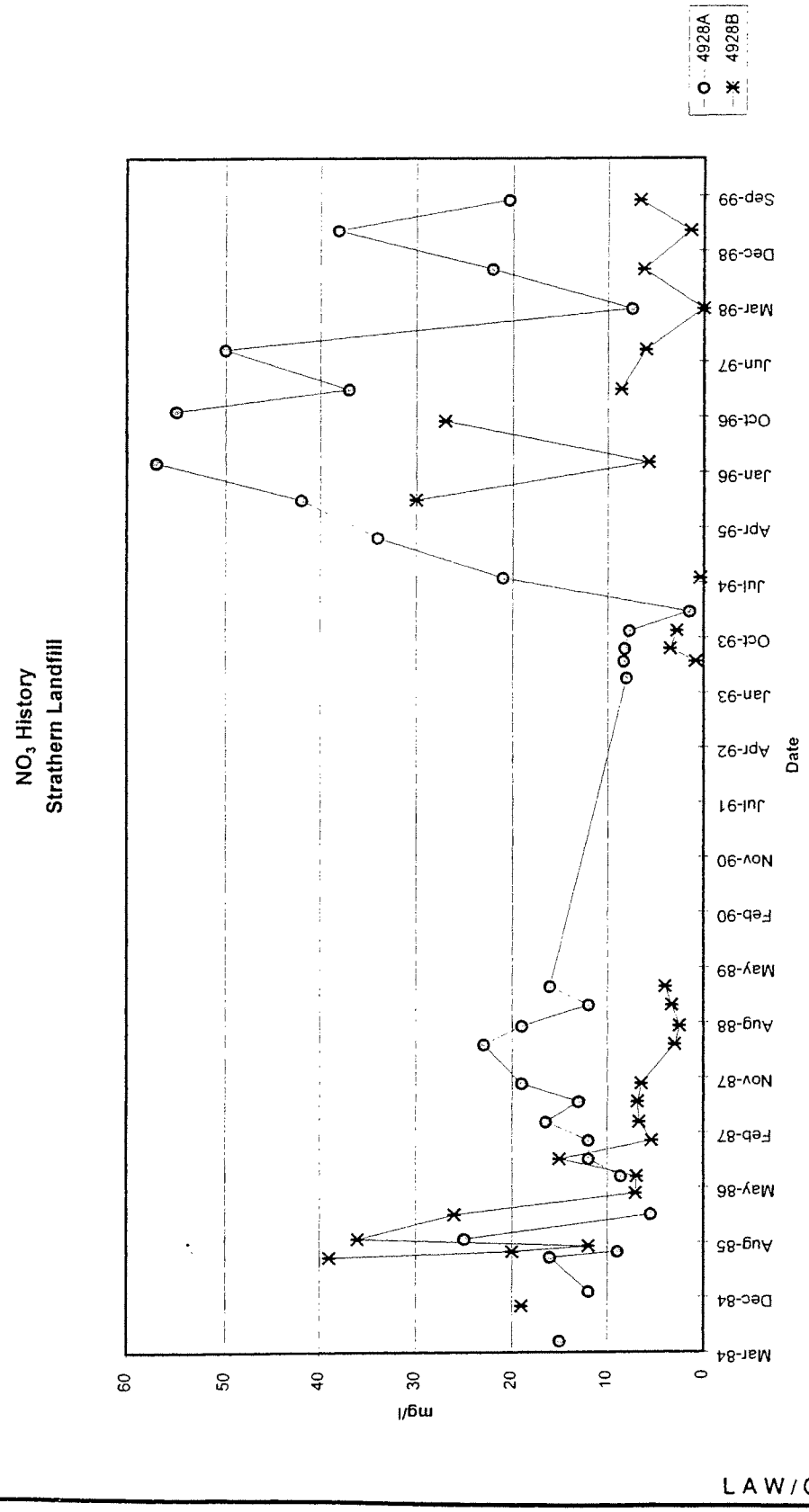
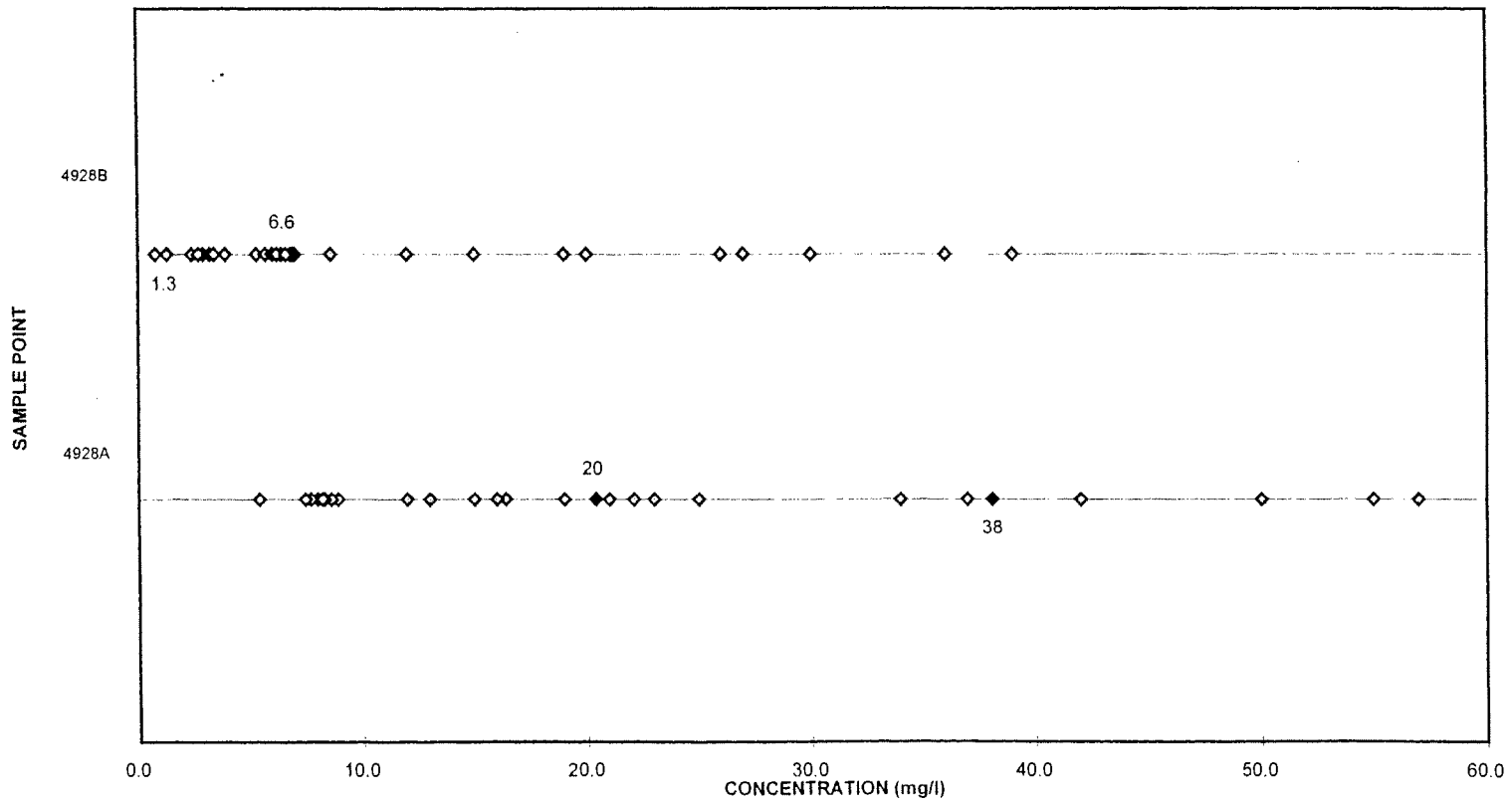


LAW/CRANDALL

JOB ____ DATE ____ F ____ DI ____ O.E ____ CHI ____

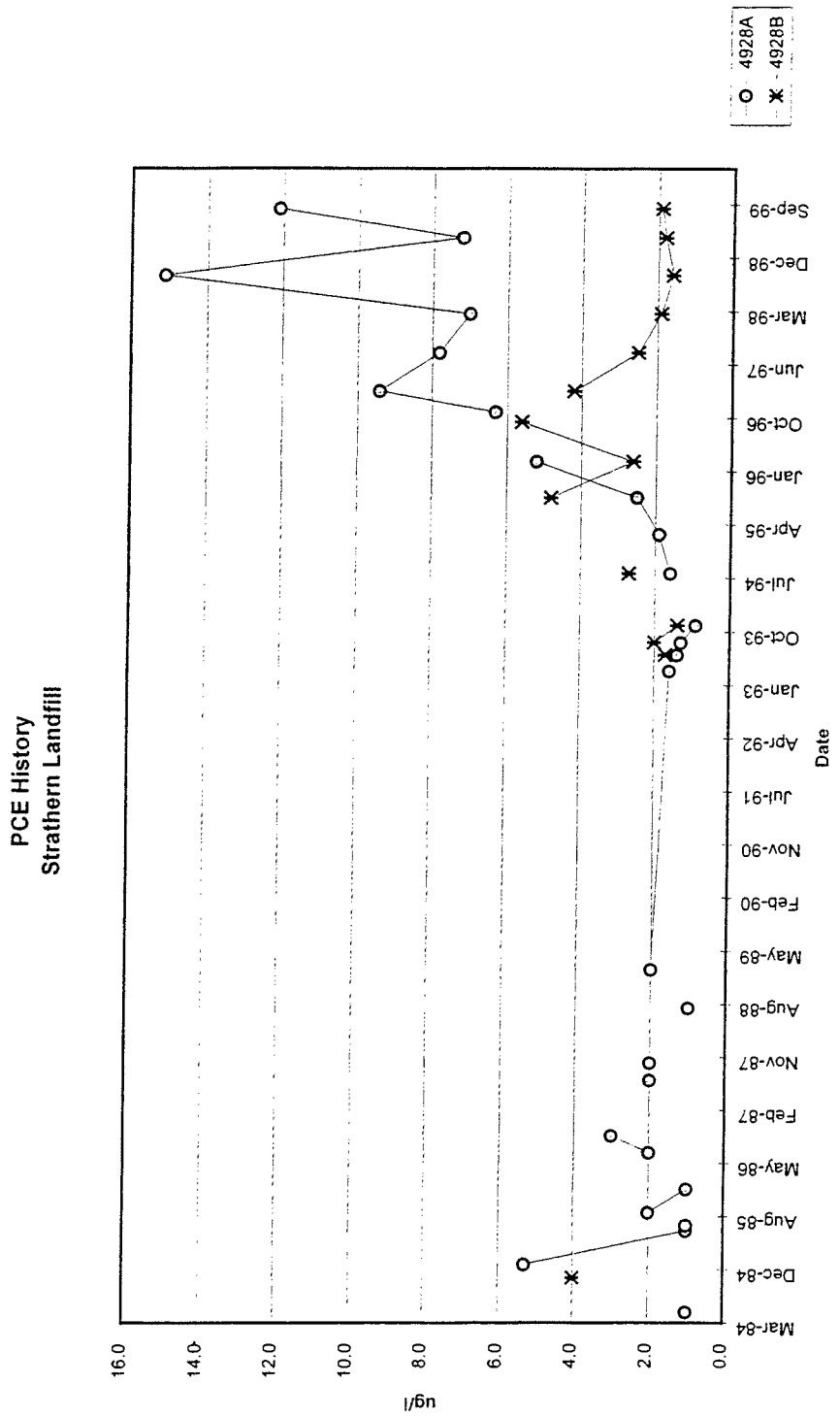
NO_3
Statistical Distribution



Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

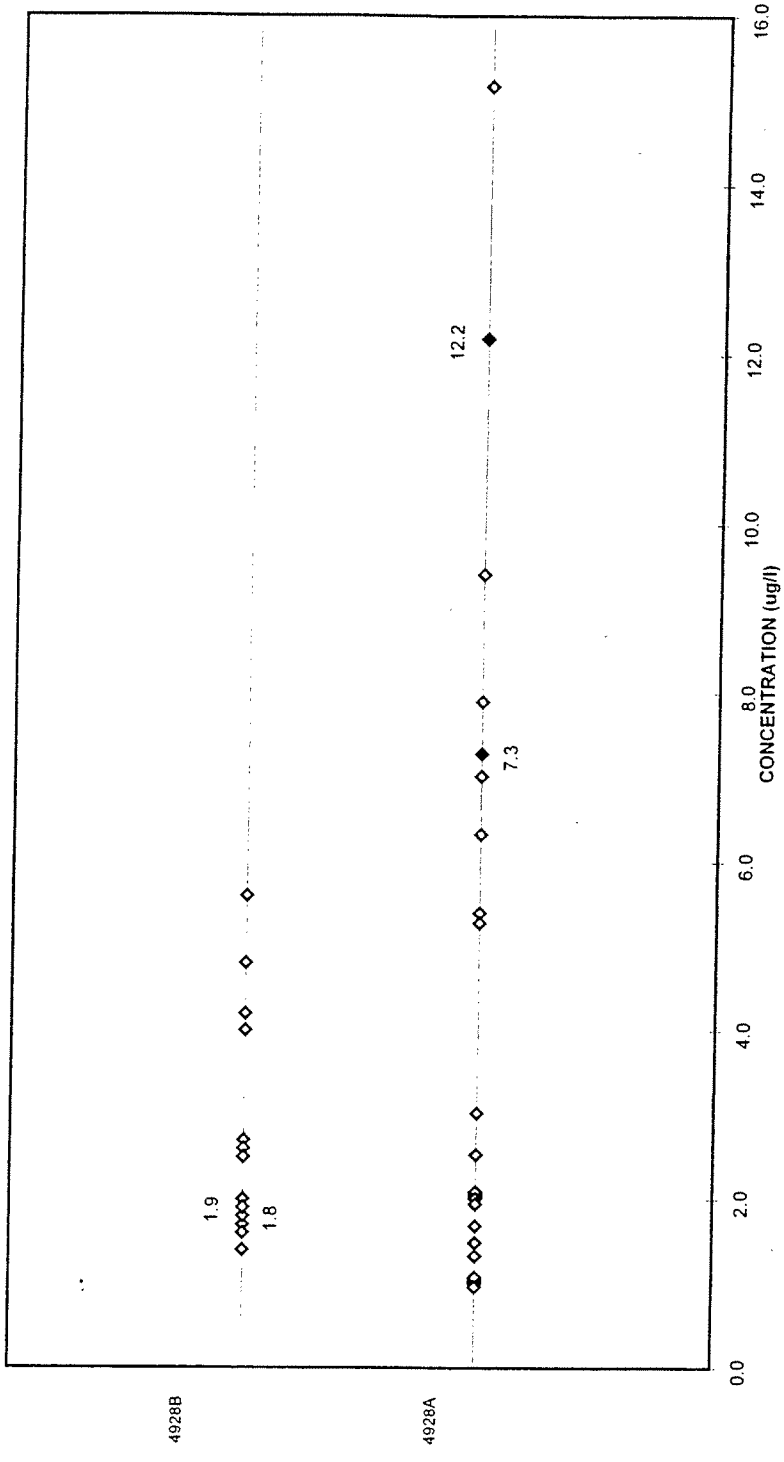
LAW/CRANDALL

CONFIDENTIAL



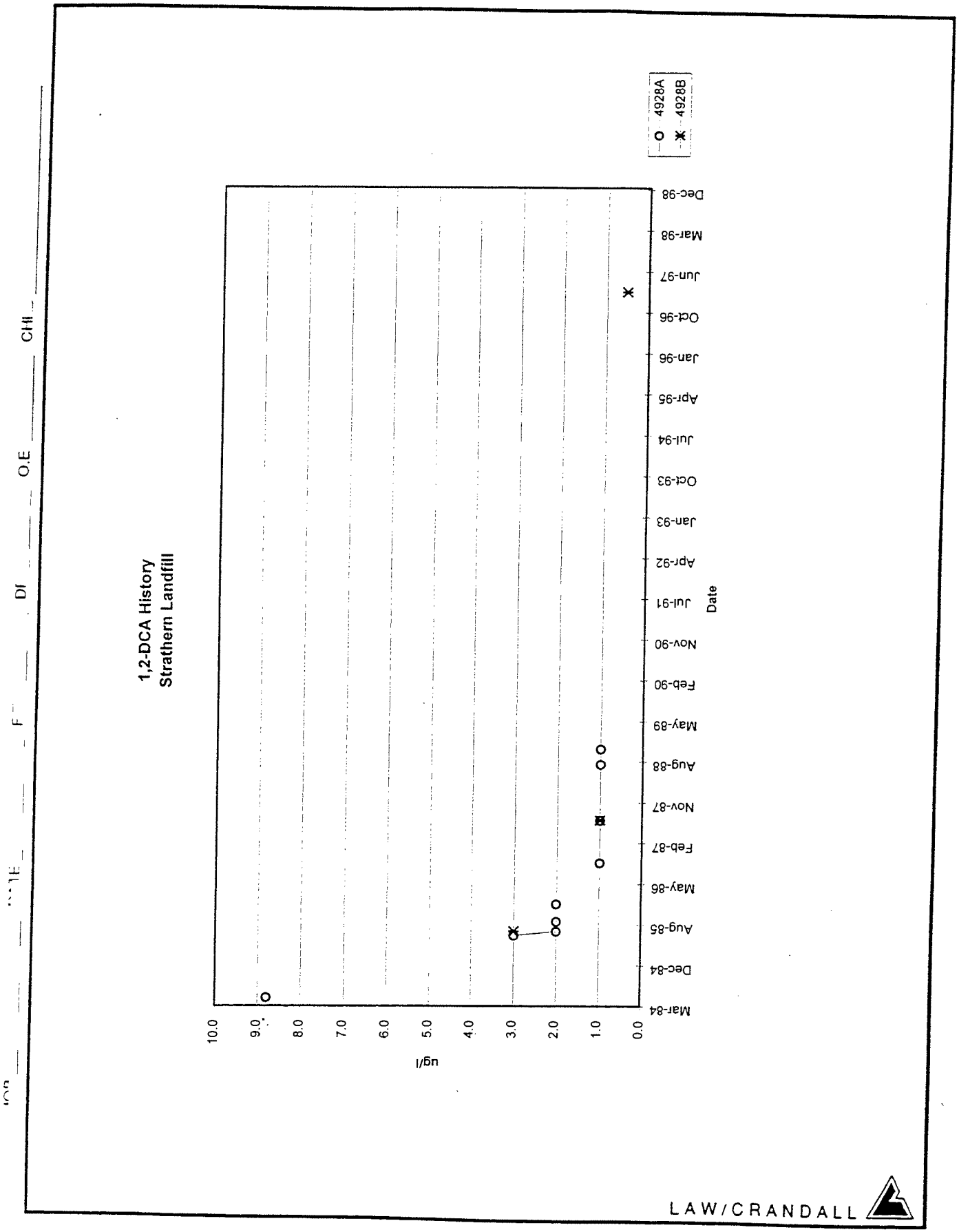
LAW/CRANDALL

PCE
Statistical Distribution

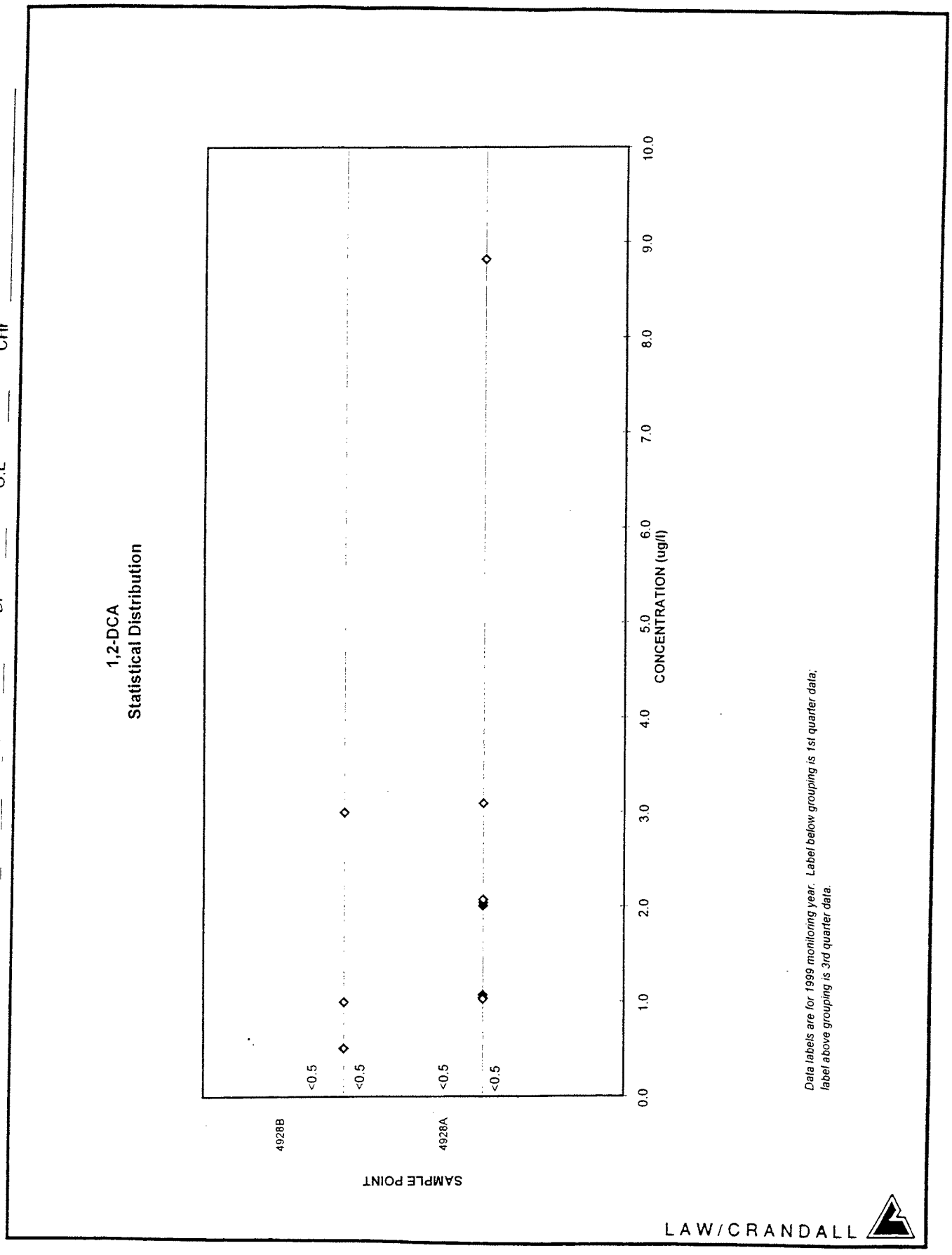


Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL



LAW/CRANDALL


1,2-DCA
Statistical Distribution
SAMPLE POINT
4928B
4928A
<0.5
<0.5
<0.5
<0.5
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
CONCENTRATION (ug/l)
Data labels are for 1999 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.
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LAW Crandall
LAWGIBB Group Member

FIRST QUARTER 1999
GROUNDWATER MONITORING REPORT

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

May 18, 1999

Law/Crandall Project 70111-2-0346

003646

CONFIDENTIAL

LAW Crandall
LAWGIBB Group Member

May 18, 1999

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irvine Drive, Suite 101
Burbank, California 91504

Subject: **First Quarter 1999**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the first quarter 1999 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area during the first quarter 1999 were similar to the third quarter 1998. Groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, and total dissolved solids (TDS) in up-gradient well 4928B; TDS and tetrachloroethene (PCE) in down-gradient well 4928A. However, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall (LAW) measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

A Division of Law Engineering and Environmental Services, Inc
200 Citadel Drive
Los Angeles, CA 90040-1554
323-889-5300 • Fax 323-721-6700

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the first quarter 1999 groundwater monitoring results. Law/Crandall collected groundwater samples on March 30, 1999 and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. The State Department of Health Services certifies AETL for such analyses.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

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Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the first quarter 1999 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March 1999. The water level at 4928A fell 0.58 feet and the water level at 4928B fell 0.14 feet since September 1998. Groundwater levels were very similar despite spreading of about 12,508 acre-feet of water by the Los Angeles County Department of Public Works at Hansen, Branford, and Tujunga spreading grounds from October 1997 through March 1999.

Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the historic water level data. We contoured the groundwater levels for March 1999. Figure 2 shows the groundwater contours.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the southeast during March, we used K in both the north-south, east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.000972 ft/ft in March. Groundwater flow for March was 0.292 ft/day or 31 ft/year to the southeast.

GROUNDWATER QUALITY

We collected groundwater samples on March 30, 1999 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were performed for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from AETL of groundwater samples collected during the first quarter of 1998. Appendix C also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for most inorganic constituents. However, in up-gradient well 4928B, levels of iron, manganese, and total dissolved solids (TDS) exceeded drinking water limits. In down-gradient well 4928A, levels of TDS exceeded drinking water standards. Table 2 shows selected first quarter 1999 results compared to California Drinking Water Standards.

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Table 2: Site Water Quality vs. California Drinking Water Standards, 1st Quarter 1999

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) March 1999	4928B (upgradient) March 1999
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	565	789
Chloride (Cl)	250	33	55
Sulfate (SO_4)	250	68	53
Nitrate (NO_3)	45	38.1	1.3
Iron (Fe)	0.3	0.18	34.4
Manganese (Mn)	0.05	<0.01	0.31
Zinc (Zn)	5	<0.03	4.62
Organic (µg/L)			
Trichloroethene (TCE)	5	1.20	0.6
Tetrachloroethene (PCE)	5	7.2	1.8
Trichlorofluoromethane	150	<1	<1
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	0.7
1,1-dichloroethane (1,1-DCA)	5	4.7	1.8
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.8	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5

* *Source: CCR, Title 22, Division 4, Chapter 15*

The levels of iron, manganese, and TDS in up-gradient well 4928B may be attributed to purge volume. On the day of the sampling event, a steady flow was not established during pumping of the well and we were unable to purge three well volumes of water. Purging of the well was minimized to collect the samples before the flow completely stopped. The water appeared to contain sand and silt with a watercolor that was light reddish brown or "rusty" due to the oxidation of the metal casing.

Levels of manganese have been decreasing since 1996 in up-gradient well 4928B. The decrease may be attributed to the discontinued use of acid preservative in the sample bottles and the decrease in water surface elevation. However, even though manganese levels have decreased, the manganese level in up-gradient well 4928B remains above drinking water standards.

The TDS level in wells 4928A and 4928B are very similar to previous quarters.

Organics

During the first quarter, trace amounts of 1,1-dichloroethane (1,1-DCA), tetrachloroethene (PCE), and trichloroethene (TCE) were detected in upgradient well 4928B. Down-gradient well 4928A contained trace amounts of 1,1-DCA, PCE, TCE, and cis-1,2-dichloroethene. Levels were below California Drinking Water Standards except for PCE in 4928A, which was slightly above the drinking water limit. The PCE levels in March 1999 samples are similar to previous quarters. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels during the first quarter of 1999 are similar to levels during the third quarter of 1998 despite moderate precipitation and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. There does not appear to be an association between landfill operations and changes in groundwater character. The potential for contamination is low due to the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible. PCE, 1,1-DCA, and TCE are present in both the up-gradient and down-gradient wells and 1,2-DCB is present in the upgradient well, suggesting that the landfill is not the source of the contamination. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Ernesto T. Aban, Jr.
Staff Engineer

William J. O'Braitis, C.E.G. 2037
Principal Geologist

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(2 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

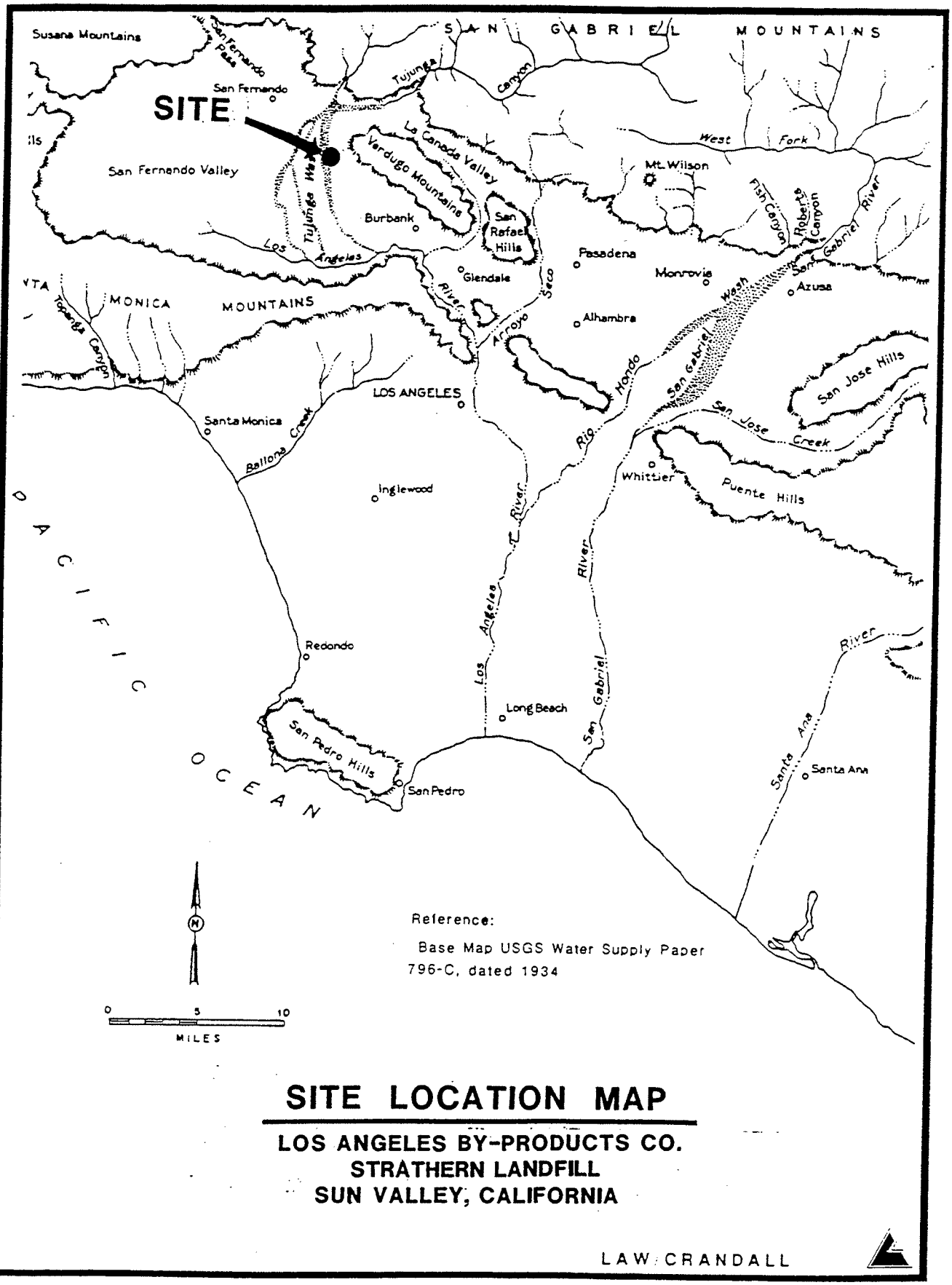
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 18TH day of MAY, 1999, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL

FIGURE 1

003656

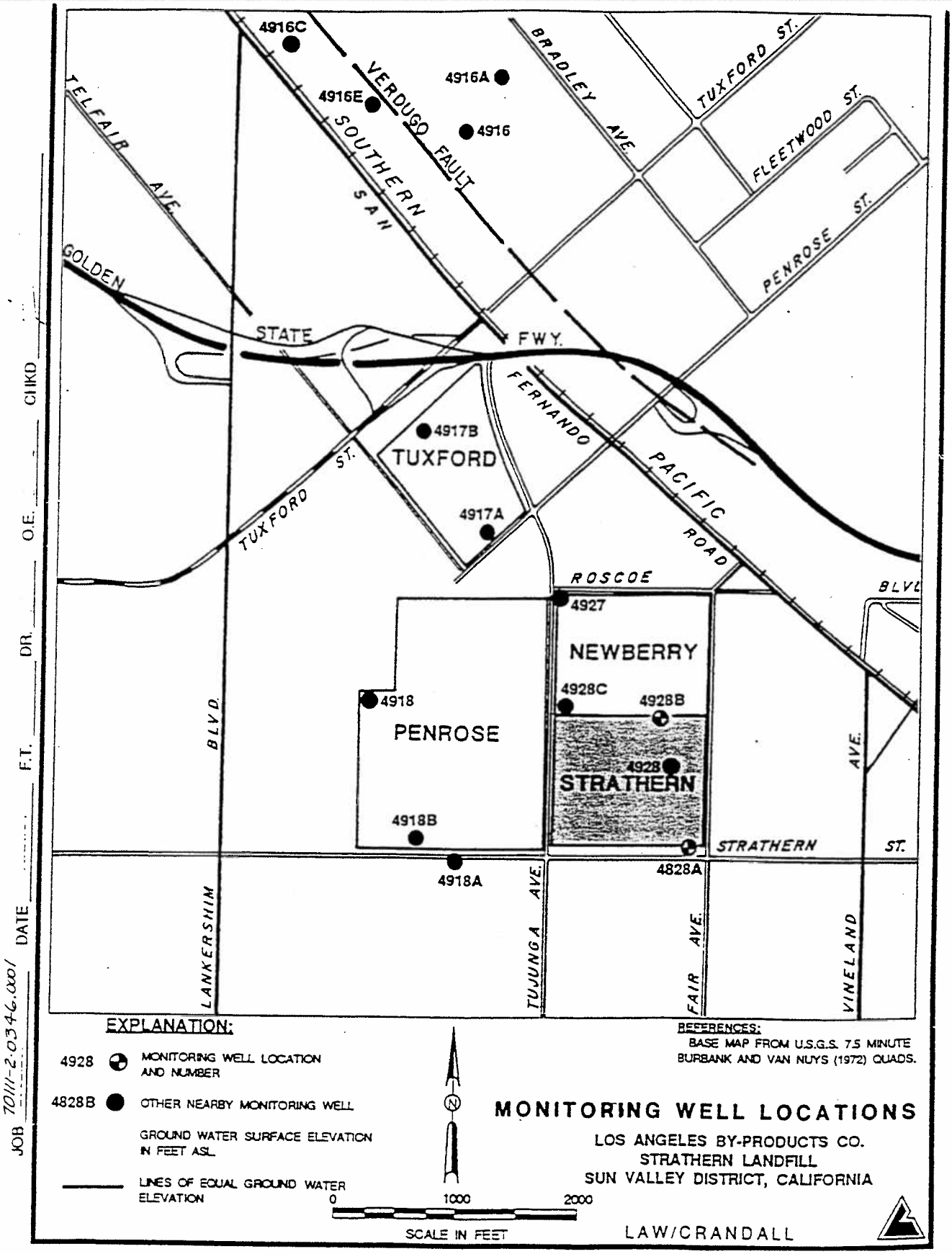

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
4917B
TUXFORD
4917A
TUXFORD ST.
PACIFIC ROAD
ROSCOE BLVD.
4927
NEWBERRY
4928C
4928B
4918
PENROSE
4928
STRATHERN
4918B
4918A
4828A
STRATHERN ST.
AVE.
BLVD.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 7011-2.0346.001 DATE F.T. DR. O.E. CHKD
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL
LINES OF EQUAL GROUND WATER ELEVATION
0 1000 2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL

FIGURE 2

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346.0001.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)			FIELD MEAS. (ppm)				LABORATORY ANALYSES								GENERAL MINERAL(ppm)							
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	.8-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	18	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	508	1300	7.0	130	38	90	9.0	0.0	490	46	87	18.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.8	0.0	820	59	98	6.9			730	0.08	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.8	230	33	79	11.0	0.0	810	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	870	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		536.51	7.0	68	1400		180	1400	7.0	160	40	91	8.8	0.0	620	28	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.8	68	900	88.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	86.0	480	1300	7.1	170	38	80	8.0	0.0	390	37	260	8.8			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	28.0	470	1400	7.4	180	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0.05	3.0	
4928A	14-Jan-87		536.50	8.9	68	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	89	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	18.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.81	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	8.9	68	760	34.5	436	1300	7.7	140	34	82	8.5	<0.8	590	56	83	19.0	0.83	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	68	950	32.0	203	1000	7.3	110	83	83	8.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.8	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	28	49	5.6	<0.8	370	58	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	68	700	35.0	360	720	7.2	92	21	35	4.5	<0.8	350	51	21	18.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.8	<0.6	320	35	16	6		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	610	7.5	72	16	29	4.5	<0.6	290	46	16	6.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	16	30	4.6	<0.6	290	46	17	6.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	68	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	68	650	50	348	830	7.1	100	24	45	5.9	<0.8	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.84	7.0	68	700	55	358	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.46	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.8	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	580	<8		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-98				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-98		516.47	7.4	65	995	130	348	980	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.46	630	<8		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.8	110	27	41	5.5	0	400	69	36	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	27	34	6.4	<2.0	320	64	50	7.4	0.8	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	68	765	25		818	7.0	97	25	31	5.0	<2	358	64	29	22.1	0.4	0.40	528	<8		
4928A	30-Mar-99		507.59	7.6	70	8.29		378	870	7.3	98	25	33	4.9	<2.0	324	68	33	38	0.30	0.50	585	<8		

NM = Not measured
NS = Not sampled

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003661

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JOB 70111-2-0346.0001.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8 8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.048		0.230				0.800	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.280				0.800	B&C
4928A	18-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.850	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-88	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-88	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.580	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.810	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.8	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.8	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.058	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-98	0.56	8.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	28-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.60	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.50	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL
4928A	30-Mar-99	1.20	7.2	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.18		<0.01	<0.05	<0.04		<0.03	AETL

NM = Not measured
NS = Not sampled

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JOB 70111-2-0346.0001,000 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)				LABORATORY ANALYSES						GENERAL MINERAL(ppm)									
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	80	40	19.0			820			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			580	<0.05	4.0	
4928B	17-Jul-85		551.71	8.6	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.08	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	58	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	18-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	28.0			480	<0.05	<3	
4928B	29-Apr-86		542.86	8.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	820	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	8.9			420	0.12	8.0	
4928B	15-Oct-86		543.10	8.0	88	690	33.5	255	680	7.8	87	10	29	4.2	0.0	280	80	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	8.7	68	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	8.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.8	340	54	18	8.8	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	8.8	70	550	8.0	290	720	7.4	87	25	38	4.3	<0.8	350	50	24	8.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	8.9	66	465	85.0	291	740	7.9	90	22	35	5.0	<0.8	370	50	21	8.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	88	455	25.0	280	710	7.8	82	31	31	4.2	<0.8	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	338	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	68	680	20.0	400	740	7.2	83	25	51	4.7	<0.8	380	53	18	3.2	0.18	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.8	66	670	23.0	372	680	7.3	85	24	38	4.8	<0.8	350	58	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<8		
4928B	22-Jun-93		502.48	7.6	69	500	45	300	890	7.0	70	26	39	6.2	<0.8	370	48	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	288	680	8.5	82	22	32	5.0	<0.8	370	48	17	3.4		0.38	390	<8		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.8	370	120	20	2.7		0.38	400	<8		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	88	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	800			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	8.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	38	42	5.9	<10	550	45	28	30	<0.2	0.15	810	<8		
4928B	23-Feb-96		528.60	7.2	75	820	35	548	1400	8.8	190	54	52	8.5	<10	890	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.81	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	8.9	180	43	48	8.1	<0.6	830	50	44	27	0.31	0.42	780			
4928B	14-Feb-97		512.95	7.8	69	930	79	540	910	7.0	110	31	38	5.8	0	500	51	29	8.8	<0.2	0.45	580	15		
4928B	26-Aug-97		505.13	7.1	72	1120	88	560	1000	8.8	150	41	45	6.4	0	800	48	38	8	0.21	0.25	880	34		
4928B	12-Mar-98		492.50	7.0	74	1152	NA	502	1110	7.0	97	35	81	9	<2.0	502	40	58	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	70	835	NA		1020	7.1	72	22	101	7.2	<2	438	57	39	8.2	0.3	0.3	818	<8		
4928B	30-Mar-99		509.34	6.9	73	138.1		532	1310	7.13	154	<0.05	43.8	8.2	<2.0	800	53	55	1.3	0.3	0.4	789	<8.0		

NM = Not measured
NS = Not sampled

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JOB 70111-2-0346.0001.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.08	<0.08		2 200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.08		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.048		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	18-Jan-88	<1	<1	<1								<0.033	<0.083		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.08	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.88	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.084	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.28	<0.2	0.11			<0.005	<0.01	0.087	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-98	1.3	2.8	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0078	<0.04		2.3	B&C
4928B	23-Aug-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-98	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.84	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.083		0.25	<0.05	<0.04		0.34	VOC
4928B	28-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.28	<0.05	<0.04		0.48	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.8	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.98	AETL
4928B	30-Mar-99	0.8	1.8	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	<0.02	34.4		0.31	<0.05	<0.04		4.62	AETL

NM = Not measured
NS = Not sampled

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be triple rinsed from current well water before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Up-gradient wells shall be sampled first, and then the down-gradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Attaching a pressure-sensitive gummed label or standardized tag on the container(s) shall identify each sample. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. The chain-of-custody record and other pertinent forms shall accompany all packages sent to the laboratory. The originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Number of Pages: 14
Date Received : 03/30/99
Date Reported : 04/14/99

Attn : Sto Aban
Phone: 323/889-5300

AETL Job Number: 12088

Project Name : Strathern
Project Number : 70111-2-0346

Site: Sun Valley

Enclosed please find results of analyses of 3 water samples which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Serrean

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003669

American Environmental Testing Laboratory, Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 12088 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT: LAW CRANDALL TELEPHONE: 323-889-5300
FAX: 323-721-6760

ADDRESS: 200 CITADEL DRIVE, LOS ANGELES, CA 90040-1554

SITE: SUN VALLEY

CONTACT PERSON: STO ABAN PROJECT NAME: STRATHERN PROJECT NUMBER: 70111-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: General Minerals	Boron	COD	5242	Cd, Cr, Ni, Pb	REMARKS
4928 A	AES8724	3/30/99	1215	Various		X					X	X	X	X	X	Filter
4928 B	AES8725	3/30/99	1148	Various		X					X	X	X	X	X	Metals
TRIP BLANK	AES8726													X		

Collected By: STO Aban Date 3/30/99 Time 1448
Relinquished By: STO Aban Date 3/30/99 Time 1449
Turn Around Time ☑ Normal ☐ Rush

Delivered By: Date Time
Received For Laboratory: Date 3/30/99 Time 1448

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 04-06-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE58724	AE58725	AE58727
				Client ID	4928A	4928B	M. Blank
				Date Sampled	03-30-99	03-30-99	03-30-99
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	04-02-99	**324**	**600**	ND
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	**324**	**600**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	04-02-99	ND	ND	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	03-30-99	**380**	**640**	ND
Boron	SM4500B	mg/L	0.2	04-06-99	**0.3**	**0.3**	ND
Chemical Oxygen Demand	410.4	mg/L	6	03-30-99	ND	ND	ND
Chloride	325.3	mg/L	1	04-05-99	**33**	**55**	ND
Fluoride	340.2	mg/L	0.2	04-06-99	**0.5**	**0.4**	ND
Nitrate	352.1	mg/L	0.1	03-30-99	**38.1**	**1.3**	ND
Nitrite as N	354.1	mg/L	0.02	03-30-99	ND	**0.10**	ND
pH	150.1	std. unit	1.00	03-30-99	**7.34**	**7.13**	NA
Specific Conductance	120.1	umhos/cm	10	03-30-99	**870**	**1,310**	ND
Sulfate	375.4	mg/L	10	04-05-99	**68**	**53**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	03-30-99	ND	**0.09**	ND
Total Dissolved Solids	160.1	mg/L	10	04-01-99	**565**	**789**	ND
Anions Total	Calc.	meq/L	0.01	04-05-99	**8.30**	**12.53**	NA
Cations Total	Calc.	meq/L	0.01	04-05-99	**8.47**	**13.50**	NA
Ion Balance	Calc.	%	0.01	04-05-99	**1.01**	**3.85**	NA
Aluminum	6010	mg/L	0.1	04-02-99	ND	**0.7**	ND
Cadmium	6010	mg/L	0.005	04-02-99	ND	ND	ND
Calcium	6010	mg/L	0.5	04-02-99	**96.3**	**154**	ND
Chromium (Total)	6010	mg/L	0.01	04-02-99	ND	ND	ND
Copper	6010	mg/L	0.02	04-02-99	ND	ND	ND
Iron	6010	mg/L	0.05	04-02-99	**0.18**	**34.4**	ND
Lead	6010	mg/L	0.05	04-02-99	ND	ND	ND
Magnesium	6010	mg/L	0.5	04-02-99	**25.2**	**44.7**	ND
Manganese	6010	mg/L	0.01	04-02-99	ND	**0.31**	ND
Nickel	6010	mg/L	0.04	04-02-99	ND	ND	ND
Potassium	6010	mg/L	1.0	04-02-99	**4.9**	**6.2**	ND
Sodium	6010	mg/L	0.5	04-02-99	**32.8**	**43.8**	ND
Zinc	6010	mg/L	0.03	04-02-99	ND	**4.62**	ND

ND = Not Detected at the Detection Limit.
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 03-31-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE58724	AE58725	AE58726	AE58727
Client Sample ID		4928A	4928B	TB	M. Blank
Date Sampled		03-30-99	03-30-99	03-30-99	03-30-99
Date Extracted		03-31-99	03-31-99	03-31-99	03-31-99
Date Analyzed		03-31-99	03-31-99	03-31-99	03-31-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	**0.7**	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**4.1**	**1.5**	ND	ND
1,1-Dichloroethane	0.5	**4.7**	**1.8**	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	**0.8**	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE58724	AE58725	AE58726	AE58727
Client Sample ID		4928A	4928B	TB	M. Blank
Date Sampled		03-30-99	03-30-99	03-30-99	03-30-99
Date Extracted		03-31-99	03-31-99	03-31-99	03-31-99
Date Analyzed		03-31-99	03-31-99	03-31-99	03-31-99
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**7.2**	**1.8**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	**1.2**	**0.6**	ND	ND
Trichlorofluoromethane	1	ND	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 04-06-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Alkalinity Total as $CaCO_3$	310.1	04-02-99	100	100	<1.0	80	120	<15
Bicarbonate Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	04-02-99	100	100	<1.0	80	120	<15
Hardness Total as $CaCO_3$	130.2	03-30-99	100	100	<1.0	80	120	<15
Boron	SM4500B	04-06-99	100	102	2.0	80	120	<15
Chemical Oxygen Demand	410.4	03-30-99	97	98	1.0	80	120	<15
Chloride	325.3	04-05-99	100	100	<1.0	80	120	<15
Fluoride	340.2	04-06-99	92	96	4.3	80	120	<15
Nitrate as N	352.1	03-30-99	96	96	<1.0	80	120	<15
Nitrite as N	354.1	03-30-99	105	105	<1.0	80	120	<15
Sulfate	375.4	04-05-99	105	103	1.9	80	120	<15
Surfactants(MBAS)	425.1	03-30-99	103	108	4.7	80	120	<15
Aluminum	6010	04-02-99	98	97	1.0	80	120	<15
Cadmium	6010	04-02-99	94	94	<1.0	80	120	<15
Calcium	6010	04-02-99	92	91	1.1	80	120	<15
Chromium (Total)	6010	04-02-99	96	95	1.0	80	120	<15
Copper	6010	04-02-99	94	94	<1.0	80	120	<15
Iron	6010	04-02-99	101	101	<1.0	80	120	<15
Lead	6010	04-02-99	95	92	3.2	80	120	<15
Magnesium	6010	04-02-99	94	93	1.1	80	120	<15
Manganese	6010	04-02-99	94	94	<1.0	80	120	<15
Nickel	6010	04-02-99	91	90	1.1	80	120	<15
Potassium	6010	04-02-99	83	83	<1.0	80	120	<15
Sodium	6010	04-02-99	82	81	1.2	80	120	<15
Zinc	6010	04-02-99	96	95	1.0	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 03-30-99
DATE SUBMITTED: 03-30-99
DATE ANALYSIS COMPLETED: 03-31-99
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-31-99	NA	NA
Date Analyzed		03-31-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	97	75	125
Bromobenzene	0.5	98	75	125
Bromochloromethane	0.5	97	75	125
Bromodichloromethane	0.5	102	75	125
Bromoform	0.5	96	75	125
Bromomethane	0.5	94	75	125
n-Butylbenzene	0.5	102	75	125
sec-Butylbenzene	0.5	103	75	125
tert-Butylbenzene	0.5	98	75	125
Carbon Tetrachloride	0.5	99	75	125
Chlorobenzene	0.5	98	75	125
Chloroethane	0.5	111	75	125
Chloroform	0.5	99	75	125
Chloromethane	0.5	94	75	125
2-Chlorotoluene	0.5	90	75	125
4-Chlorotoluene	0.5	97	75	125
Dibromochloromethane	0.5	96	75	125
Dibromomethane	1	100	75	125
1,2-Dibromo-3-Chloropropane	1	99	75	125
1,2-Dibromoethane	0.5	98	75	125
1,2-Dichlorobenzene	0.5	99	75	125
1,3-Dichlorobenzene	0.5	99	75	125
1,4-Dichlorobenzene	0.5	94	75	125
Dichlorodifluoromethane	0.5	115	75	125
1,1-Dichloroethane	0.5	102	75	125
1,2-Dichloroethane	0.5	97	75	125
1,1-Dichloroethene	0.5	99	75	125
cis-1,2-Dichloroethene	0.5	92	75	125
trans-1,2-Dichloroethene	0.5	95	75	125
1,2-Dichloropropane	0.5	94	75	125
1,3-Dichloropropane	0.5	104	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 12088

EPA Method 524.2 (L/C) QA/QC DATA (Cont...)

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-31-99	NA	NA
Date Analyzed		03-31-99	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
2,2-Dichloropropane	0.5	90	75	125
1,1-Dichloropropene	0.5	92	75	125
cis-1,3-Dichloropropene	0.5	103	75	125
trans-1,3-Dichloropropene	0.5	102	75	125
Ethylbenzene	0.5	100	75	125
Freon 113	1	110	75	125
Hexachlorobutadiene	0.5	110	75	125
Isopropylbenzene	0.5	99	75	125
p-Isopropyltoluene	0.5	99	75	125
Methylene Chloride	1	103	75	125
Napathalene	1	96	75	125
n-Propylbenzene	0.5	99	75	125
Styrene	0.5	96	75	125
1,1,1,2-Tetrachloroethane	0.5	96	75	125
1,1,2,2-Tetrachloroethane	1	97	75	125
Tetrachloroethene	0.5	97	75	125
Toluene	0.5	99	75	125
1,2,3-Trichlorobenzene	1	105	75	125
1,2,4-Trichlorobenzene	1	105	75	125
1,1,1-Trichloroethane	0.5	98	75	125
1,1,2-Trichloroethane	0.5	98	75	125
Trichloroethene	0.5	97	75	125
Trichlorofluoromethane	1	109	75	125
1,2,3-Trichloropropane	1	100	75	125
1,2,4-Trimethylbenzene	0.5	97	75	125
1,3,5-Trimethylbenzene	0.5	96	75	125
Vinyl Chloride	0.5	102	75	125
o-Xylene	0.5	95	75	125
m & p Xylenes	1	95	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit
NS = Not Spiked
NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/30/99	03/30/99	03/30/99	**Detection**
Date Analyzed:	03/30/99	03/30/99	03/30/99	**Limit**
COD	ND	ND	ND	6

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	97	98	1

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: 524.2
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE58724	AE58725	AE58726	AE58727	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/31/99	03/31/99	03/31/99	03/31/99	**Detection**
Date Analyzed:	03/31/99	03/31/99	03/31/99	03/31/99	**Limit**
Acetone	ND	ND	ND	ND	1.0
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
2- Butanone	ND	ND	ND	ND	1.0
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Disulfide	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
2- Chloroethyl Vinylether	ND	ND	ND	ND	1.0
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	0.5
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	0.5
1,2- Dichlorobenzene	ND	0.7	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	4.1	1.5	ND	ND	0.5
1,1- Dichloroethane	4.7	1.8	ND	ND	0.5
1,2- Dichloroethane	ND	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	0.8	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1.0
Hexachlorobutadiene	ND	ND	ND	ND	0.5

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Units: ug/L

Lab ID: / **Sample No:**	AE58724 4928A	AE58725 4928B	AE58726 TRIP BLANK	AE58727 METHOD BLANK	**Detection Limit**
2- Hexanone	ND	ND	ND	ND	1.0
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
MTBE	ND	ND	ND	ND	1.0
4- Methyl-2-Pentanone	ND	ND	ND	ND	1.0
Methylene Chloride	ND	ND	ND	ND	1.0
Naphthalene	ND	ND	ND	ND	0.5
N- Propylbenzene	ND	ND	ND	ND	0.5
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	0.5
Tetrachloroethene	7.2	1.8	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	0.5
1,2,4- Trichlorobenzene	ND	ND	ND	ND	0.5
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	1.2	0.6	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1.0
1,2,3- Trichloropropane	ND	ND	ND	ND	0.5
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Acetate	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1.0

QUALITY CONTROL SUMMARY

Lab ID:	AE58724	AE58725	AE58726	AE58727
Surrogate Percent Recovery				
Bromofluorobenzene	89	96	96	97
1,2- Dichlorobenzene-d4	84	95	94	85

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	100	92	8
Chlorobenzene	98	94	4
1,1- Dichloroethene	96	88	8
Toluene	96	90	7
Trichloroethene	97	90	8

003673

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	03/30/99	03/30/99	03/30/99	**Detection**
Date Analyzed:	04/06/99	04/06/99	04/06/99	**Limit**
Alkalinity by Titration				
Bicarbonate (as CaCO3)	324	600	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	324	600	ND	2
Calculation				
Anions Total (meq/L)	8.30	12.53	ND	0.01
Cations Total (meq/L)	8.47	13.50	ND	0.01
Ion Balance, (Percent)	1.01	3.85	ND	0.01
General				
Chloride (Cl), total	33	55	ND	1
Conductivity (umhos/cm @ 77F	870	1310	ND	10
Fluoride (F), total	0.5	0.4	ND	0.2
Hardness (Ca,Mg) as CaCO3	380	640	ND	2
Nitrate	38.1	1.3	ND	0.1
Nitrite (as N), total	ND	0.10	ND	0.02
PH (pH units)	7.34	7.13	ND	1.00
Sulfate (SO4)	68	53	ND	10
Surfactants (MBAS)	ND	0.09	ND	0.05
Total Dissolved Solids	565	789	ND	10
Metals				
Aluminum (Al)	ND	0.7	ND	0.1
Calcium (Ca)	96.3	154	ND	0.5
Copper (Cu)	ND	ND	ND	0.02
Iron (Fe)	0.18	34.4	ND	0.05
Magnesium (Mg)	25.2	44.7	ND	0.5
Manganese (Mn)	ND	0.31	ND	0.01
Potassium (K)	4.9	6.2	ND	1.0
Sodium (Na)	32.8	43.8	ND	0.5
Zinc (Zn)	ND	4.62	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

QUALITY CONTROL SUMMARY

Lab ID:	AE58724	AE58725	AE58727
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	92	96	4.3
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate (as N), total	96	96	<1
Nitrite (as N), total	105	105	<1
Sulfate (SO4)	105	103	1.9
Surfactants (MBAS)	103	108	4.7
Metals			
Aluminum (Al)	98	97	1
Calcium (Ca)	92	91	1.1
Copper (Cu)	94	94	<1
Iron (Fe)	101	101	<1
Magnesium (Mg)	94	93	1.1
Manganese (Mn)	94	94	<1
Potassium (K)	83	83	<1
Sodium (Na)	82	81	1.2
Zinc (Zn)	96	95	1

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	04/06/99	04/06/99	04/06/99	**Detection**
Date Analyzed:	04/06/99	04/06/99	04/06/99	**Limit**
Boron (B)	0.3	0.3	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	100	102	2

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 12088
Project ID: 70111-2-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Sto Aban

Phone: 323/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE58724	AE58725	AE58727	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/30/99	03/30/99	03/30/99	
Date Extracted:	04/01/99	04/01/99	04/01/99	**Detection**
Date Analyzed:	04/02/99	04/02/99	04/02/99	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	ND	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	94	94	<1
Chromium (Cr)	96	95	1
Lead (Pb)	95	92	3.2
Nickel (Ni)	91	90	1.1

ND - Not Detected at The Detection Limit

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LAW Crandall
LAWGIBB Group Member

1998 ANNUAL REPORT
GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company
Burbank, California

Prepared by

Law/Crandall

Los Angeles, California

Law/Crandall Project 70111-2-0346

February 1, 1999

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LAW Crandall
LAWGIBB Group Member

February 1, 1999

Mr. Mike McAllister
Los Angeles By-Products Company
444 Irvine Drive, Suite 101
Burbank, California 91504

Subject: **1998 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 1998 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells declined about 13 feet between the third quarter 1997 and first quarter 1998. Between the first and third quarters 1998, groundwater levels rose about 17 feet probably as a result of increased precipitation experienced in the southern California region during the winter months. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, zinc and total dissolved solids (TDS). Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene (PCE) and 1,1-dichloroethane (1,1-DCA). However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

A Division of Law Engineering and Environmental Services, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554
323-889-5300 • Fax 323-721-6700

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 1998 groundwater monitoring program. Law/Crandall collected groundwater samples in March and September of 1998 and prepared this report. American Environmental Testing Laboratory, Inc. (AETL) performed the chemical analyses. AETL is certified for such analyses by the California Department of Health Services.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1998 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in March and September 1998. Groundwater levels fell about 13 feet between August 1997 and March 1998. Between March and September 1998, groundwater levels rose about 17 feet in the monitoring wells. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for March and September. Appendix B contains these contour maps.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient across the site was 0.0014 ft/ft to the south/southwest in March and 0.0012 ft/ft to the south in September. Groundwater flow for March was 0.42 ft/day or 153 ft/year. In September, flow was 0.36 ft/day or 131 ft/year. At these flow velocities it would take 7 to 8 years for groundwater to flow across the site.

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GROUNDWATER QUALITY

We measured groundwater levels and collected groundwater samples from wells 4928A and 4928B for the first quarter on March 12, 1998 and for the third quarter on September 21, 1998. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Lab analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from AETL of groundwater samples collected in 1998. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 1998, the groundwater met California Drinking Water Standards for most constituents. However, levels of iron, manganese, zinc and total dissolved solids (TDS) exceeded drinking water limits. Table 2 shows selected 1998 results compared to California Drinking Water Standards.

TDS levels may be related to changes in groundwater levels. Historically at the site, increases in TDS levels appear to coincide with higher water levels. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels rose, dissolved solids increased. However, water levels declined between the third quarter 1997 and first quarter 1998 and TDS increased. Subsequently, between the first and third quarter 1998, water levels rose 16.70 feet and TDS levels decreased but remain above the recommended Maximum Concentration Level (MCL). The different relationship between water levels and TDS during 1998 may be related to a seasonal variation caused by the unusually heavy winter rainfall year.

Table 2: Site Water Quality vs. California Drinking Water Standards
1998 Cumulative Data

Constituent	Recommended Maximum Concentration Level*	Water Source			
		4928A		4928B	
		March	Sept.	March	Sept.
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	593	528	802	618
Chloride (Cl)	250	50	29	56	39
Sulfate (SO_4)	250	84	64	40	57
Nitrate (NO_3)	45	7.44	5.0	<0.1	1.4
Iron (Fe)	0.3	0.15	0.95	51.5	44.5
Manganese (Mn)	0.05	<0.01	0.01	0.18	0.23
Zinc (Zn)	5	0.54	0.18	7.98	4.96
Organic (µg/L)					
Trichloroethylene (TCE)	5	0.6	1.5	0.5	<0.5
Tetrachloroethylene (PCE)	5	7.0	15.1	1.9	1.6
Trichlorofluoromethane	150	0.3	<1	<1	<1
Dichlorodifluoromethane	—	1.5	13.6	2.1	3.8
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethane (1,1-DCA)	5	1.9	5.9	1.3	1.4
1,1,1-trichloroethane (1,1,1-TCA)	200	<0.5	<0.5	<0.5	<0.5

* *Source: CCR, Title 22, Division 4, Chapter 15*

Manganese continued to exceed drinking water standards in upgradient well 4928B during 1998. However, data indicate that these levels are lower than previous years. Iron levels in both on site monitoring wells increased during 1998. The iron level in downgradient well 4928A has gradually increased since 1997. Upgradient 4928B iron levels indicate a significant increase compared to 1997 levels and iron levels in well 4928A. Data indicate that as groundwater levels on site increase so does the concentration of iron. However, a distinct correlation between groundwater levels and iron concentrations has not been proven.

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Nitrate levels in both upgradient and downgradient monitoring wells have fallen since 1996 and are now below the MCL. No high nitrogen containing wastes (e.g., sewage wastes) are deposited at the landfill. Therefore, as mentioned in earlier reports, we suspect another source elevated nitrate levels in both on site wells.

Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents. Figure 4 shows a Schoeller plot of inorganic laboratory results from samples collected during September of 1998. The plot shows groundwater at the site is a calcium-bicarbonate water. Sodium and potassium concentrations are elevated at well 4928B which indicates that the groundwater has been "softened" at the upgradient well. The levels of sulfate are slightly lower in upgradient well 4928B. The carbonate/bicarbonate levels are higher than calcium levels in both wells which is reflective of a slightly acidified groundwater body.

Organics

During 1998, trace amounts of dichlorodifluoromethane, 1,1-dichloroethane (1,1-DCA), tetrachloroethene (PCE) and trichloroethene (TCE) were detected in upgradient monitoring well 4928B. Trace amounts of dichlorodifluoromethane, 1,1-DCA, PCE, TCE, and trichlorofluoromethane were detected in downgradient well 4928A. Levels were below California Drinking Water Standards in downgradient well 4928A except for PCE and 1,1-DCA.

No definite pattern has emerged from the volatile organic sampling data. The landfill does not appear to be the source since concentrations of organics observed in samples from upgradient well 4928B in the past have tended to have higher concentrations than in samples from downgradient well 4928A. However, during 1998, the same chemical constituents have been detected in both the upgradient and downgradient wells. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

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CONCLUSIONS AND RECOMMENDATIONS

Water levels fell about 13 feet between August 1997 and March 1998. Between March and September 1998, water levels rose about 17 feet in response to increased precipitation experienced in the southern California region during the winter months. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese, zinc and total dissolved solids (TDS). The different relationship between water levels and TDS during 1998 may be related to a seasonal variation caused by the unusually heavy winter rainfall year. Nitrate levels have fallen in both the upgradient and downgradient wells and are now below California Drinking Water Standards. No high nitrogen containing wastes (e.g., sewage wastes) are disposed at the landfill. Therefore, as mentioned in previous reports, we suspect another source elevated nitrate levels in both on site wells. Trace concentrations of several organic compounds have appeared intermittently, yet persistently, over time at both upgradient and downgradient monitoring wells. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5356.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Larry K. Barker
Senior Project Manager

William J. O'Braitis, C.E.G. 2037
Principal Geologist

\70111\92_PROJ\20346\99\0346AR01.DOC/WJO:swb
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

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CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

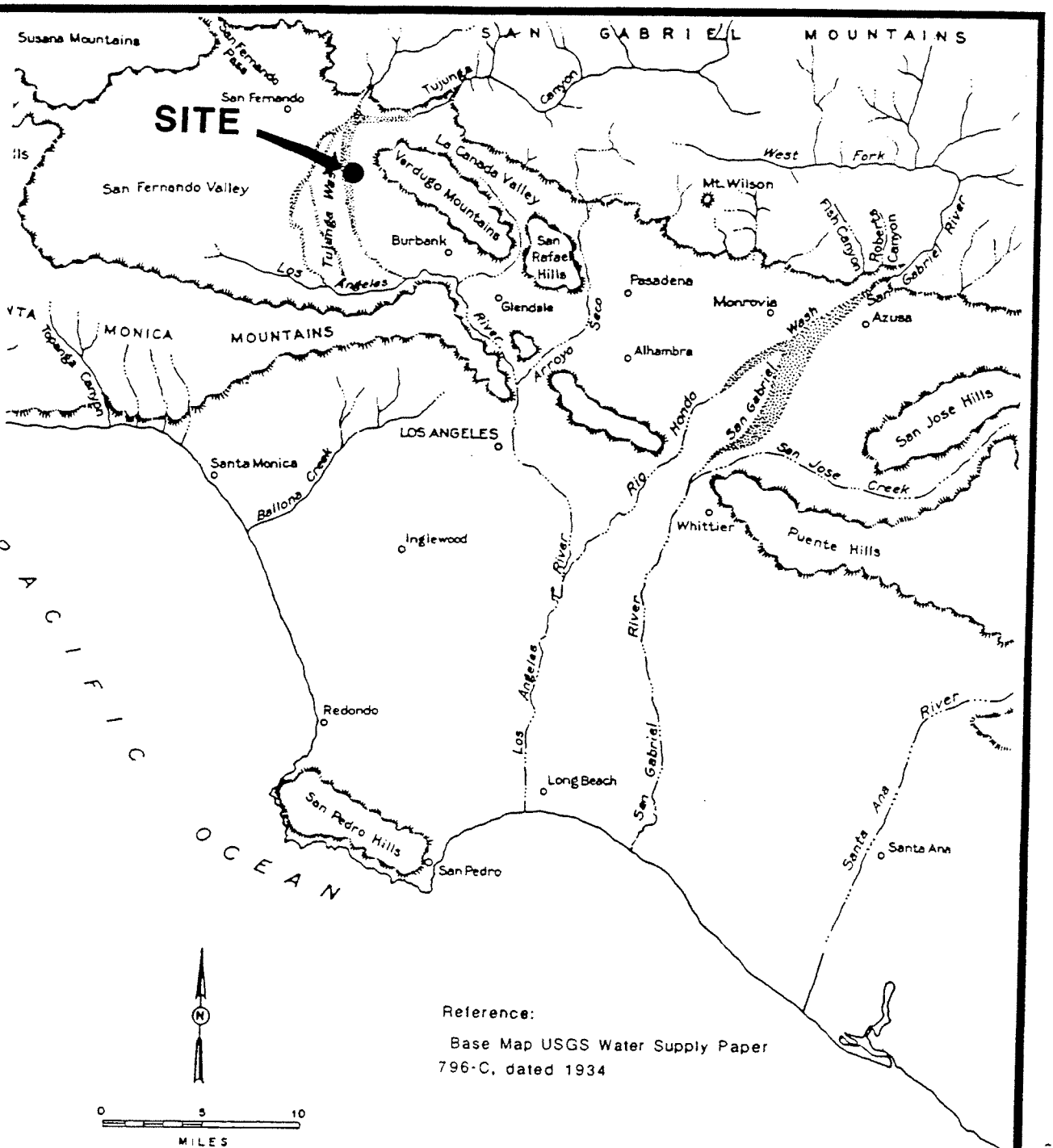
Executed the 1st day of March, 1999, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

CONFIDENTIAL



Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003694

2702.20346.0001 1-31-94 G.M.C. O.E. CHK

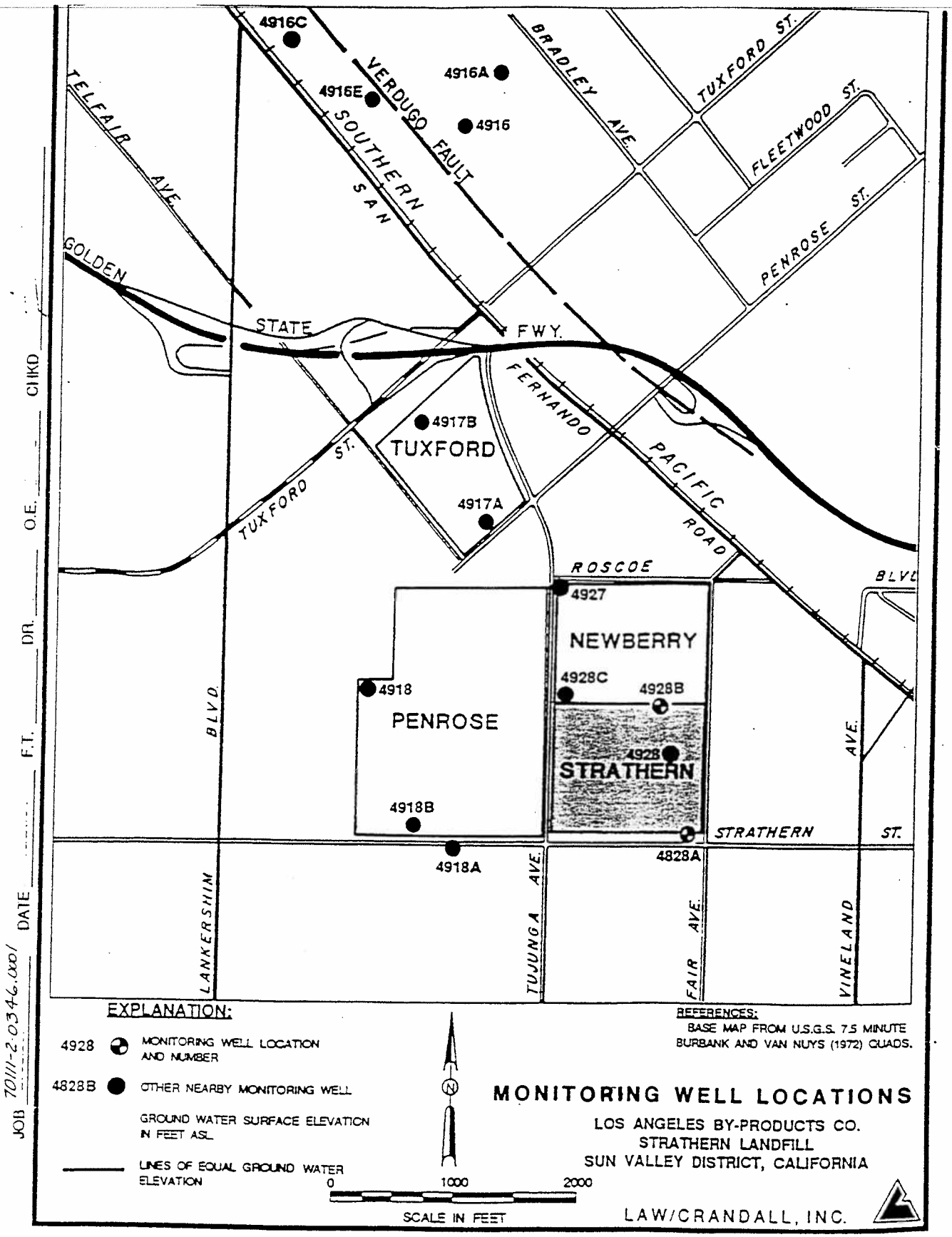
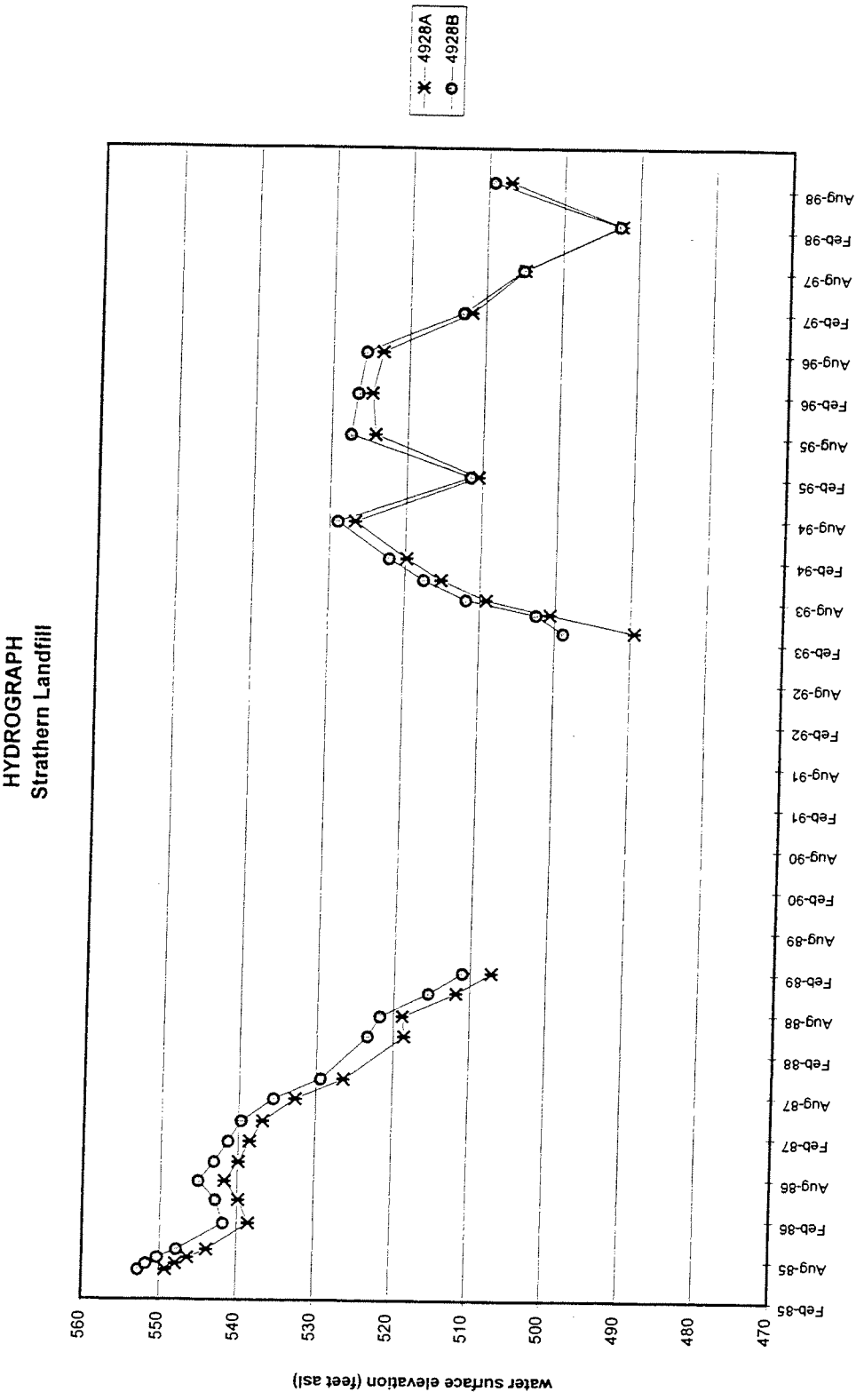

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
PACIFIC ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE BLVD.
4927
NEWBERRY
4928C
4928B
4928
STRATHERN
4918
PENROSE
4918B
4918A
4828A
STRATHERN ST.
AVE.
BLVD.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 70111-20346.001 DATE F.T. DR. O.E. CHKD
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL
LINES OF EQUAL GROUND WATER ELEVATION
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
N
0 1000 2000
SCALE IN FEET
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL, INC.

FIGURE 2

J 701 034 11 1 F.T. DR. J.E. CHKD



LAW/CRANDALL

FIGURE 3

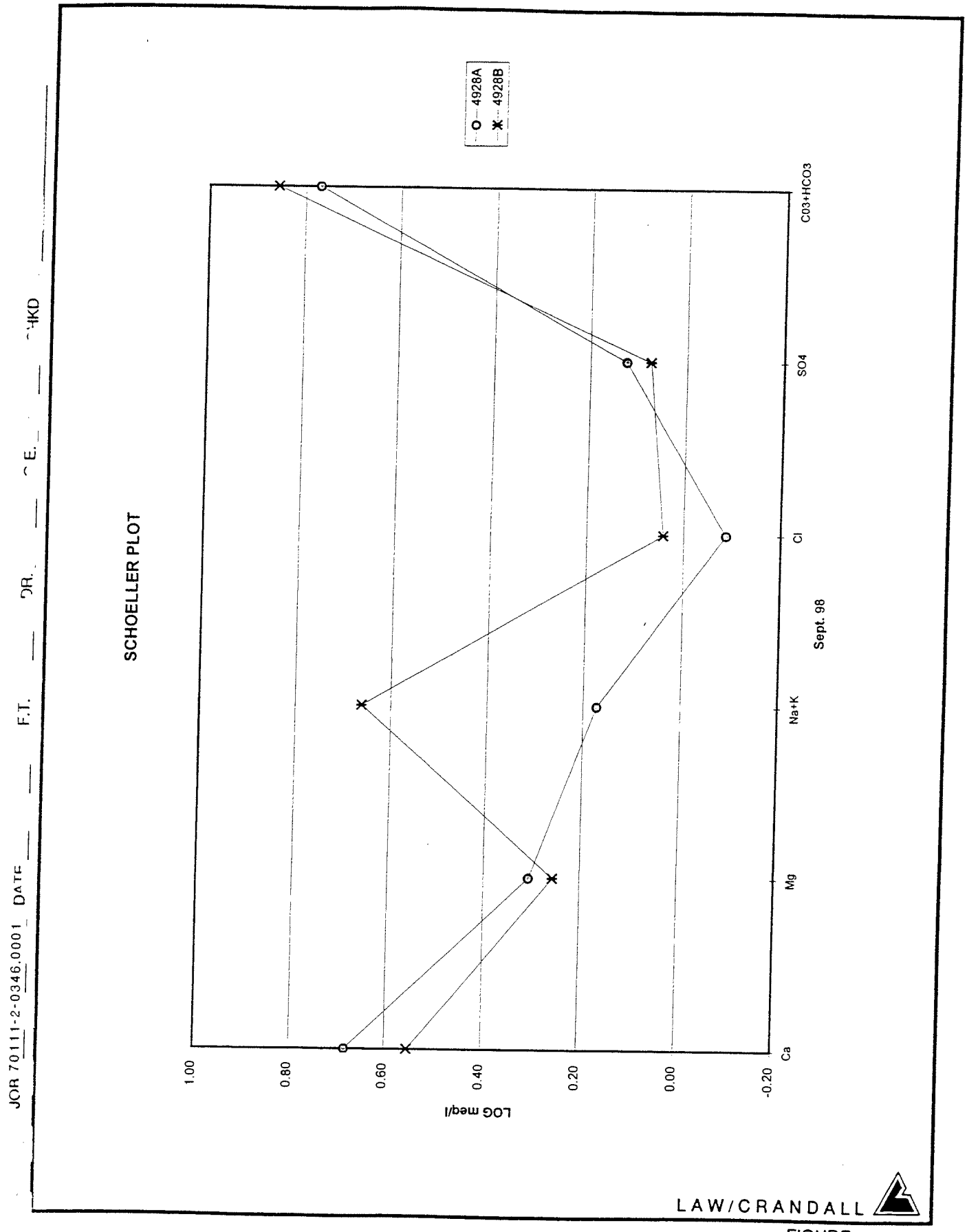

JOB 70111-2-0346.0001 DATE
F.T.
SCHOELLER PLOT
4928A
4928B
LOG meq/l
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
Ca
Mg
Na+K
Cl
SO4
CO3+HCO3
Sept. 98
LAW/CRANDALL

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		WATER LEV (ft)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL (ppm)						
POINT	DATE	REF PT	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803 78								7.2	120	28	48	6.0	0.0	383	75	85	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	28	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549 22	7 1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	48	87	18.0			750	<0.05	8.0	
4928A	17-Jul-85		547 95	6 8	68	1180	102.0	480	1300	6.9	120	34	93	8.8	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		548.41	8.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	810	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	8 3	68	1250	40.5	555	1500	8.8	250	35	78	6.0	0.0	870	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-88		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.8	0.0	820	28	150	5.4			880	<0.05	20.0	
4928A	29-Apr-88		539.84	6.8	88	900	68.0	350	1100	7.8	170	27	63	7.8	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-88		541.87	7.3	89	1200	88.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	280	8.8			780	0.11	5.0	
4928A	15-Oct-88		539.90	5.9	87	1200	26.0	470	1400	7.4	180	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	8.9	68	340	75.0	460	1400	7.0	180	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		538.86	5.8	89	1100	42.5	490	1500	8.8	170	44	85	8.6	<0.8	650	82	130	18.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	830	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		528.40	8 9	88	780	34.5	438	1300	7.7	140	34	82	8.5	<0.8	590	58	83	19.0	0.83	0.30	780	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	68	950	32.0	203	1000	7.3	110	63	63	8.4	<0.8	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	87	450	37.0	385	900	7.4	99	24	51	5.6	<0.8	442	51	38	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.8	<0.8	370	58	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	68	700	35.0	360	720	7.2	92	21	35	4.5	<0.8	350	51	21	18.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.8	320	35	18	8		0.43	330	<8		
4928A	22-Jun-93		500.59	7.8	88	440	25	252	610	7.5	72	18	29	4.5	<0.8	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	87	550	25	244	810	7.1	73	18	30	4.6	<0.8	290	48	17	8.2		0.47	340	<8		
4928A	19-Nov-93		515.15	7.4	86	500	22	248	600	7.4	69	17	29	4.5	<0.8	290	47	19	7.7		0.84	350	<8		
4928A	21-Feb-94		519.78	7.2	88	850	50	348	830	7.1	100	24	45	5.9	<0.8	430	52	34	1.4	0.3	0.28	530			
4928A	05-Aug-94		526.64	7.0	68	700	55	358	820	7.0	91	23	39	5.4	<1	330	48	48	21	0.28	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	8.9	97	25	38	5.3	<0.8	390	87	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	88	850	100	388	900	8.9	100	25	43	5.4	<10	330	87	35	42	0.29	0.19	580	<8		
4928A	23-Feb-98		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<8		
4928A	23-Aug-98		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-98				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-98		516.47	7.4	65	995	130	348	980	7.1	120	30	47	6.4	<10	380	73	45	55	0.28	0.48	830	<8		
4928A	14-Feb-97		511.81	7.2	85	830	50	420	850	8.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	87	825	34	372	890	8.8	110	27	41	5.5	0	400	89	38	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.3	88	881	36	320	890	7.3	101	27	34	8.4	<2.0	320	84	50	7.4	0.8	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	785	25		818	7.0	97	25	31	5.0	<2	358	84	29	5.0	0.4	0.40	528	<8		

NM = Not measured
NS = Not sampled

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003699

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JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8 8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	18-Jan-86	<1	1	2								<0.033	<0.083		0.390				0.850	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-88	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-88	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.580	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.810	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.480	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.8	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.058	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.080	0.027	<0.04		1.5	B&C
4928A	23-Aug-98	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-98	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.58	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	28-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.60	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.50	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003700

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JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	670	7.1	82	24	92	6.3	0.0	450	53	36	39.0			560.	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	62	24	84	6.2	0.0	450	66	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	260	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.16	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	16	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	63	25	51	4.7	<0.6	360	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.26	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.76		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	62	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	680	32.0		
4928B	23-Aug-96		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7.0	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	71.5	1120	68	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		
4928B	12-Mar-98		492.50	7.0	73.6	1152	NA	502	1110	7.0	97	35	61	9	<2.0	502	40	56	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	69.6	835	NA		1020	7.1	72	22	101	7.2	<2	438	57	39	1.4	0.3	0.3	618	<6		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003701

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JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.08		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.048		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.087	B&C
4928B	18-Jan-88	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-88	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.08	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.88	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.28	<0.2	0.11			<0.005	<0.01	0.087	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-98	1.3	2.8	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0078	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-98	1.4	5.8	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.84	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.28	<0.05	<0.04		0.48	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.8	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.98	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003702

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APPENDIX B

GROUNDWATER CONTOUR MAPS

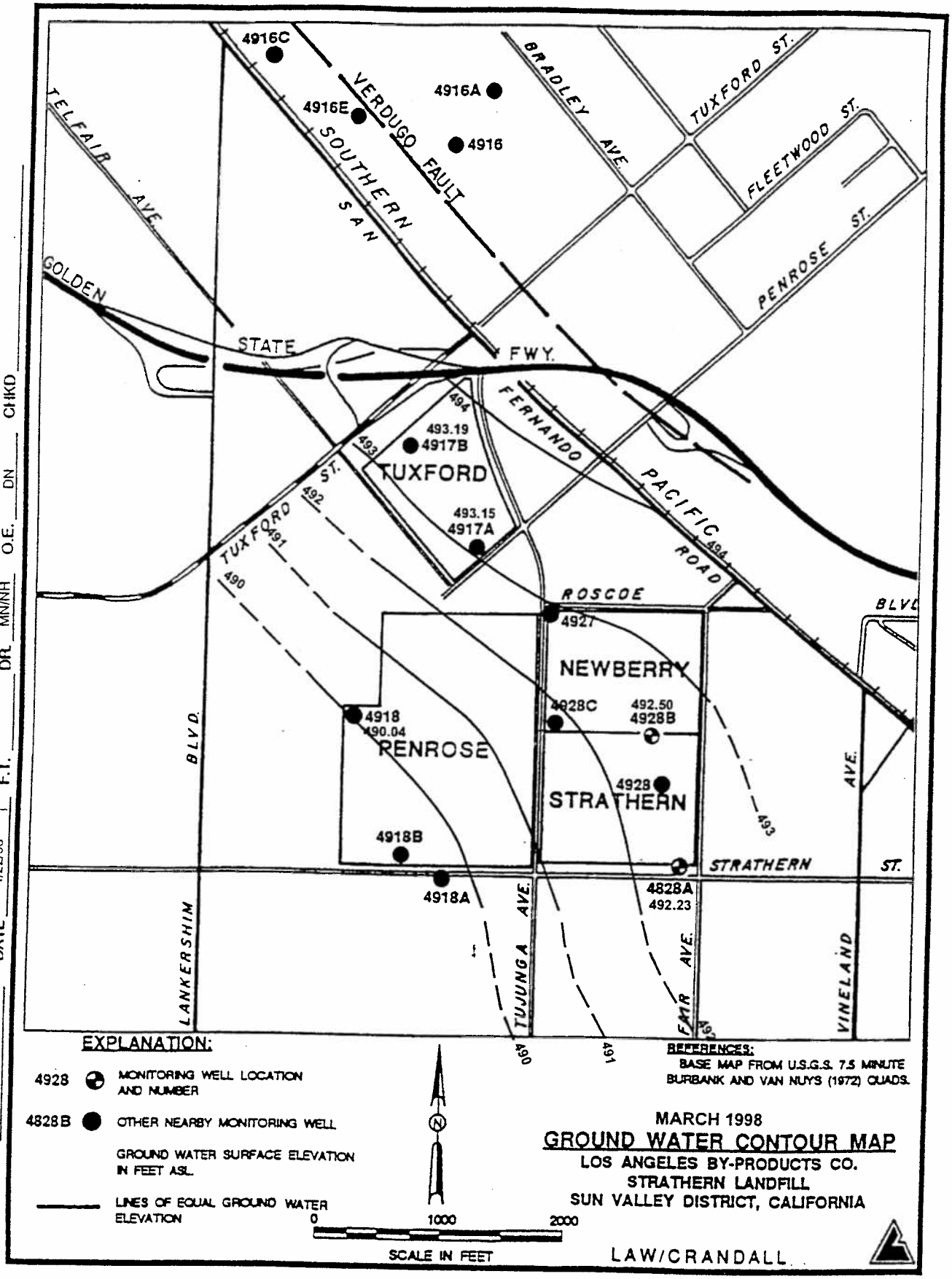
4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE FWY.
FERNANDO
PACIFIC ROAD
494
493.19
4917B
TUXFORD
493
492
491
490
493.15
4917A
TUXFORD ST.
ROSCOE BLVD.
4927
NEWBERRY
4928C
492.50
4928B
4928
STRATHERN
4918
490.04
PENROSE
4918B
4918A
4828A
492.23
STRATHERN ST.
LANKERSHIM BLVD.
TUJUNGA AVE.
FAIR AVE.
VINELAND AVE.
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL
LINES OF EQUAL GROUND WATER ELEVATION
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
N
0
1000
2000
SCALE IN FEET
MARCH 1998
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL
JOB 70111-2-0346.0001 DATE 4/22/98 F.T. DR MN/NH O.E. DN CHKD

FIGURE B-1

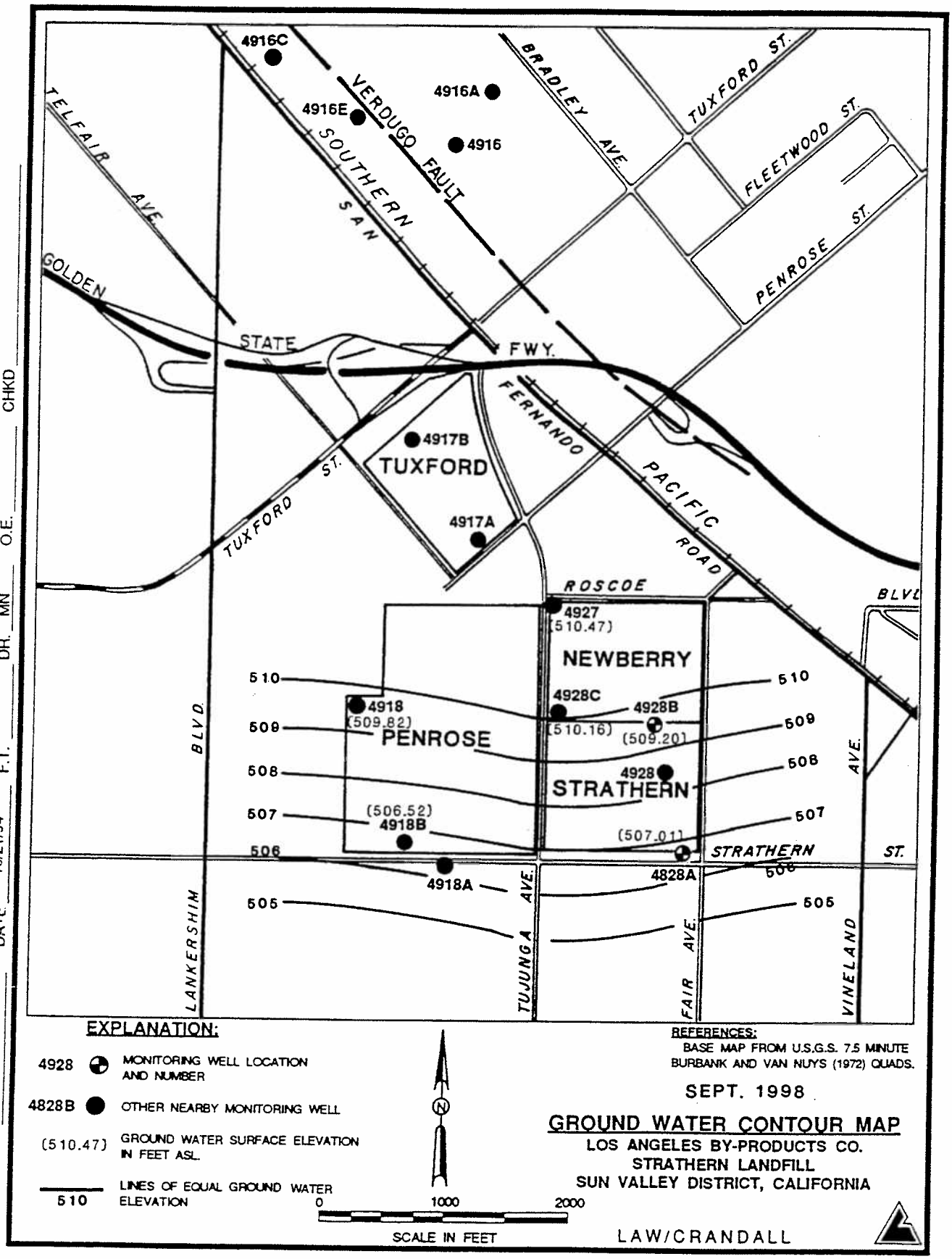
4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN
SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
4917B
TUXFORD
4917A
FERNANDO
PACIFIC
ROAD
TUXFORD ST.
ROSCOE
BLVD
4927
(510.47)
NEWBERRY
4928C
4928B
(510.16)
(509.20)
4928
STRATHERN
4918
(509.82)
PENROSE
(506.52)
4918B
(507.01)
4918A
4828A
STRATHERN ST.
AVE.
BLVD.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
510
509
508
507
506
505
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
(510.47) GROUND WATER SURFACE ELEVATION IN FEET ASL.
510 LINES OF EQUAL GROUND WATER ELEVATION
0
1000
2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
SEPT. 1998
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL
DATE 10/21/94
DR. MN
CHKD
O.E.
F.T.
7011-2-00346.0001

FIGURE B-2

APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to limit the potential of cross-contamination. The depth to the groundwater level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

Equipment must be handled in a manner that will minimize potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. Equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells (or clean wells) shall be sampled first, and then the downgradient wells (or more contaminated wells).

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, and temperature all change rapidly and must be measured and recorded in the field during well purging.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags or equivalent. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN OF CUSTODY

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. Packages sent to the laboratory shall be accompanied by the Chain of Custody Record and other pertinent forms. Th originating office shall retain copies of these forms.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that potential evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Number of Pages: 13
Date Received : 03/12/98
Date Reported : 04/03/98

Attn : Bill O'Braitis
Phone: 213/889-5300

AETL Job Number: 9553
Project Number : 70111-2-0346

Site: Strathern

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Sevilla

Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-27 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE46230	AE46231	AE46233
				Client ID	4928A	4928B	M.Blank
				Date Sampled	03-12-98	03-12-98	03-12-98
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	**320**	**502**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	03-18-98	ND	ND	ND
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	03-18-98	**320**	**502**	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	03-20-98	**600**	**650**	ND
Total Dissolved Solids	160.1	mg/L	10	03-19-98	**593**	**802**	ND
Chemical Oxygen Demand	410.4	mg/L	10	03-12-98	ND	ND	ND
Specific Conductance	120.1	umhos/cm	10	03-20-98	**890**	**1,110**	ND
pH	150.1	std. unit	1.00	03-12-98	**7.25**	**7.03**	ND
Sulfate	375.4	mg/L	10	03-20-98	**84**	**40**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	03-14-98	**0.11**	**0.11**	ND
Nitrate	352.1	mg/L	0.1	03-14-98	**7.44**	ND	ND
Nitrite as N	354.1	mg/L	0.02	03-12-98	**0.02**	**0.03**	ND
Chloride	325.3	mg/L	1	03-23-98	**50**	**56**	ND
Fluoride	340.2	mg/L	0.2	03-20-98	**0.4**	**0.2**	ND
Boron	SM4500B	mg/L	0.2	03-27-98	**0.6**	**0.5**	ND
Anions Total	Calc.	meq/L	0.01	03-24-98	**8.45**	**10.7**	ND
Cations Total	Calc.	meq/L	0.01	03-24-98	**8.90**	**11.4**	ND
Ion Balance	Calc.	%	0.01	03-24-98	**2.59**	**3.40**	ND
Aluminum	6010	mg/L	0.1	03-24-98	ND	**0.7**	ND
Copper	6010	mg/L	0.02	03-24-98	ND	**0.02**	ND
Cadmium	6010	mg/L	0.005	03-24-98	ND	ND	ND
Chromium (Total)	6010	mg/L	0.01	03-24-98	ND	ND	ND
Nickel	6010	mg/L	0.04	03-24-98	ND	ND	ND
Lead	6010	mg/L	0.05	03-24-98	ND	**0.14**	ND
Iron	6010	mg/L	0.05	03-24-98	**0.15**	**51.5**	ND
Calcium	6010	mg/L	0.5	03-24-98	**101**	**97.1**	ND
Magnesium	6010	mg/L	0.5	03-24-98	**26.5**	**34.7**	ND
Manganese	6010	mg/L	0.01	03-24-98	ND	**0.18**	ND
Potassium	6010	mg/L	1.0	03-24-98	**6.4**	**9.0**	ND
Sodium	6010	mg/L	0.5	03-24-98	**34.3**	**80.9**	ND
Zinc	6010	mg/L	0.03	03-24-98	**0.54**	**7.98**	ND

ND = Not Detected at the Detection Limit. **DL** = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-19 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE46230	AE46231	AE46232	AE46233
Client Sample ID		4928A	4928B	T. Blank	M.Blank
Date Sampled		03-12-98	03-12-98	03-12-98	03-12-98
Date Extracted		03-19-98	03-19-98	03-19-98	03-19-98
Date Analyzed		03-19-98	03-19-98	03-19-98	03-19-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**1.5**	**2.1**	ND	ND
1,1-Dichloroethane	0.5	**1.9**	**1.3**	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

American Environmental Testing Laboratory Inc.
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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE46230	AE46231	AE46232	AE46233
Client Sample ID		4928A	4928B	T. Blank	M.Blank
Date Sampled		03-12-98	03-12-98	03-12-98	03-12-98
Date Extracted		03-19-98	03-19-98	03-19-98	03-19-98
Date Analyzed		03-19-98	03-19-98	03-19-98	03-19-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**7.0**	**1.9**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	**0.6**	**0.5**	ND	ND
Trichlorofluoromethane	1	**0.3**	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-24 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	03-18-98	100	100	<1	80	120	<15
Alkalinity Total as $CaCO_3$	310.1	03-18-98	100	100	<1	80	120	<15
Hardness Total as $CaCO_3$	130.2	03-20-98	100	100	<1	80	120	<15
Chemical Oxygen Demand	410.4	03-12-98	100	106	5.8	80	120	<15
Sulfate	375.4	03-20-98	94	94	<1	80	120	<15
Surfactants(MBAS)	425.1	03-20-98	90	90	<1	80	120	<15
Nitrate	352.1	03-20-98	91	91	1.8	80	120	<15
Nitrite as N	354.1	03-12-98	100	100	<1	80	120	<15
Chloride	325.3	03-23-98	100	100	<1	80	120	<15
Fluoride	340.2	03-20-98	92	90	2.2	80	120	<15
Boron	SM4500B	03-27-98	100	95	5.13	80	120	<15
Aluminum	6010	03-24-98	100	102	1.0	80	120	<15
Copper	6010	03-24-98	101	102	1.0	80	120	<15
Cadmium	6010	03-24-98	98	99	1.0	80	120	<15
Chromium (Total)	6010	03-24-98	100	101	1.0	80	120	<15
Nickel	6010	03-24-98	95	96	1.1	80	120	<15
Lead	6010	03-24-98	94	94	1.1	80	120	<15
Iron	6010	03-24-98	102	103	1.0	80	120	<15
Calcium	6010	03-24-98	110	100	9.5	80	120	<15
Magnesium	6010	03-24-98	110	110	<1	80	120	<15
Manganese	6010	03-24-98	96	96	<1	80	120	<15
Potassium	6010	03-24-98	93	94	1.1	80	120	<15
Sodium	6010	03-24-98	100	100	<1	80	120	<15
Zinc	6010	03-24-98	98	99	1.0	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference,
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 9553

PROJECT: Strathern-70111-2-0346
SITE: Strathern
DATE SAMPLED: 03-12-98
DATE SUBMITTED: 03-12-98
DATE ANALYSIS COMPLETED: 03-19 -98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		03-19-98	NA	NA
Date Analyzed		03-19-98	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	105	75	125
Chlorobenzene	0.5	106	75	125
1,1-Dichloroethene	0.5	115	75	125
Toluene	0.5	105	75	125
Trichloroethene	0.5	104	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/12/98	03/12/98	03/12/98	**Detection**
Date Analyzed:	03/12/98	03/12/98	03/12/98	**Limit**
COD	ND	ND	ND	10

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	358	347	3.1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: 524.2
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE46230	AE46231	AE46232	AE46233	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/19/98	03/19/98	03/19/98	03/19/98	**Detection**
Date Analyzed:	03/19/98	03/19/98	03/19/98	03/19/98	**Limit**
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	0.5
Dibromochloromethane	ND	ND	ND	ND	1
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	0.5
1,2- Dichlorobenzene	ND	ND	ND	ND	1
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	**1.5**	**2.1**	ND	ND	0.5
1,1- Dichloroethane	**1.9**	**1.3**	ND	ND	0.5
1,2- Dichloroethane	ND	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	ND	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	0.5
Hexachlorobutadiene	ND	ND	ND	ND	1
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
Methylene Chloride	ND	ND	ND	ND	0.5
Naphthalene	ND	ND	ND	ND	1
N- Propylbenzene	ND	ND	ND	ND	1
(Continued)					0.5

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Units: ug/L

Lab ID: / **Sample No:**	AE46230 4928A	AE46231 4928B	AE46232 TRIP BLANK	AE46233 METHOD BLANK	**Detection Limit**
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	1
Tetrachloroethene	7.0	1.9	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	1
1,2,4- Trichlorobenzene	ND	ND	ND	ND	1
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	ND	0.5	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1
1,2,3- Trichloropropane	ND	ND	ND	ND	1
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1

QUALITY CONTROL SUMMARY

Lab ID:	AE46230	AE46231	AE46232	AE46233
Surrogate Percent Recovery				
Bromofluorobenzene	101	102	101	102
Dibromofluoromethane	90	92	85	89
Toluene-d8	101	99	100	101

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	105	105	<1
Chlorobenzene	107	108	<1
1,1- Dichloroethene	116	110	5.3
Toluene	106	107	1
Trichloroethene	104	104	<1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/12/98	03/12/98	03/12/98	**Detection**
Date Analyzed:	03/24/98	03/24/98	03/24/98	**Limit**
Alkalinity by Titration				
Bicarbonate (as CaCO3)	320	502	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	320	502	ND	2
Calculation				
Anions Total (meq/L)	8.45	10.65	ND	0.01
Cations Total (meq/L)	8.90	11.40	ND	0.01
Ion Balance, (Percent)	2.59	3.40	ND	0.01
General				
Chloride (Cl), total	50	56	ND	1
Conductivity (umhos/cm @ 77F	890	1110	ND	10
Fluoride (F), total	0.4	0.2	ND	0.2
Hardness (Ca,Mg) as CaCO3	600	650	ND	2
Nitrate	7.44	ND	ND	0.1
Nitrite (as N), total	0.02	0.03	ND	0.02
PH (pH units)	7.25	7.03	ND	1.00
Sulfate (SO4)	84	40	ND	10
Surfactants (MBAS)	0.11	0.11	ND	0.05
Total Dissolved Solids	593	802	ND	10
Metals				
Aluminum (Al)	ND	0.7	ND	0.1
Calcium (Ca)	101	97.1	ND	0.5
Copper (Cu)	ND	0.02	ND	0.02
Iron (Fe)	0.15	51.5	ND	0.05
Magnesium (Mg)	26.5	34.7	ND	0.5
Manganese (Mn)	ND	0.18	ND	0.01
Potassium (K)	6.4	9.0	ND	1.0
Sodium (Na)	34.3	80.9	ND	0.5
Zinc (Zn)	0.54	7.98	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

QUALITY CONTROL SUMMARY

Lab ID:	AE46230	AE46231	AE46233
	Spike %REC.	Spike DUP. %REC.	AVG. RPD
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	92	90	2.2
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate	91	91	1.8
Nitrite (as N), total	100	100	<1
Sulfate (SO4)	94	94	<1
Surfactants (MBAS)	90	90	<1
Metals			
Aluminum (Al)	100	102	1
Calcium (Ca)	110	100	9.5
Copper (Cu)	101	102	1
Iron (Fe)	102	103	1
Magnesium (Mg)	110	110	<1
Manganese (Mn)	96	96	<1
Potassium (K)	93	94	1.1
Sodium (Na)	100	100	<1
Zinc (Zn)	98	99	1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/27/98	03/27/98	03/27/98	**Detection**
Date Analyzed:	03/27/98	03/27/98	03/27/98	**Limit**
Boron (B)	0.6	0.5	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	100	95	5.1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 9553
Project ID: 70111-2-0346

Report To: (L/C)
Law/Crandall, Inc.Co.
200 Citadel Drive Road
Los Angeles, CA 90040-1554

Site:
Strathern

Attn: Bill O'Braitis

Phone: 213/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE46230	AE46231	AE46233	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	03/12/98	03/12/98	03/12/98	
Date Extracted:	03/19/98	03/19/98	03/19/98	**Detection**
Date Analyzed:	03/24/98	03/24/98	03/24/98	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	**0.14**	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	98	99	1
Chromium (Cr)	100	101	1
Lead (Pb)	94	94	<1
Nickel (Ni)	95	96	1.1

ND - Not Detected at The Detection Limit

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Number of Pages: 14
Date Received : 09/21/98
Date Reported : 10/02/98

Attn : Darren Ness
Phone: 323/889-5300

AETL Job Number: 10689

Project Name : Strathern
Project Number : 70111-7-0346

Site: Sun Valley

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director

AETL

American Environmental Testing Laboratory Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 10689 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT: LAW/CRANDALL
TELEPHONE: 323-889-5300
FAX: 323-721-6700
ADDRESS: 200 CITADEL DRIVE LOS ANGELES, CA 90040-1554
SITE: SUN VALLEY
CONTACT PERSON: P. NESS
PROJECT NAME: STRATHERN
PROJECT NUMBER: 70111-2-0346

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	ANALYSIS REQUESTED: GENERAL MINERALS	BORON	COD	524.2	Cd, Cr, Ni, Pb								REMARKS
4928 A	AE52009	9/21/98	1245	VARIOUS		X				COOLER	X	X	X	X	X								FILTER
4928 B	AE52010	9/21/98	1115	VARIOUS		X				COOLER	X	X	X	X	X								METALS
TRIP BLANK	AE52011													X									

Collected By: DARREN R. NESS Date 9/21/98 Time 1245
Relinquished By: [signature] Date 9/21/98 Time 1330
Turn Around Time: [X] Normal [ ] Rush

Delivered By: [signature] Date 9/21/98 Time 1330
Received For Laboratory: [signature] Date 9-21-98 Time 1330

00372

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SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-29-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE52009	AE52010	AE52011
				Client ID	4928A	4928B	M. Blank
				Date Sampled	09-21-98	09-21-98	09-21-98
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	**358**	**438**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	ND	ND	ND
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	09-28-98	**358**	**438**	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	09-29-98	**520**	**330**	ND
Total Dissolved Solids	160.1	mg/L	10	09-23-98	**528**	**618**	ND
Chemical Oxygen Demand	410.4	mg/L	6	09-28-98	ND	ND	ND
Specific Conductance	120.1	umhos/cm	10	09-29-98	**816**	**1.020**	ND
pH	150.1	std. unit	1.00	09-21-98	**7.04**	**7.09**	ND
Sulfate	375.4	mg/L	10	09-23-98	**64**	**57**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	09-22-98	ND	ND	ND
Nitrate as N	352.1	mg/L	0.1	09-22-98	**5.0**	**1.4**	ND
Nitrite as N	354.1	mg/L	0.02	09-22-98	ND	**0.06**	ND
Chloride	325.3	mg/L	1	09-28-98	**29**	**39**	ND
Fluoride	340.2	mg/L	0.2	09-28-98	**0.4**	**0.3**	ND
Boron	SM4500B	mg/L	0.2	09-29-98	**0.4**	**0.3**	ND
Anions Total	Calc.	meq/L	0.01	09-29-98	**8.40**	**9.58**	NA
Cations Total	Calc.	meq/L	0.01	09-29-98	**8.36**	**10.00**	NA
Ion Balance	Calc.	%	0.01	09-29-98	**0.23**	**2.14**	NA
Aluminum	6010	mg/L	0.1	09-24-98	ND	**2.7**	ND
Copper	6010	mg/L	0.02	09-24-98	ND	ND	ND
Cadmium	6010	mg/L	0.005	09-24-98	ND	ND	ND
Chromium (Total)	6010	mg/L	0.01	09-24-98	ND	ND	ND
Nickel	6010	mg/L	0.04	09-24-98	ND	ND	ND
Lead	6010	mg/L	0.05	09-24-98	ND	ND	ND
Iron	6010	mg/L	0.05	09-24-98	**0.95**	**44.5**	ND
Calcium	6010	mg/L	0.5	09-24-98	**96.6**	**71.5**	ND
Magnesium	6010	mg/L	0.5	09-24-98	**24.6**	**21.9**	ND
Manganese	6010	mg/L	0.01	09-24-98	**0.01**	**0.23**	ND
Potassium	6010	mg/L	1.0	09-24-98	**5.0**	**7.2**	ND
Sodium	6010	mg/L	0.5	09-24-98	**31.2**	**101**	ND
Zinc	6010	mg/L	0.03	09-24-98	**0.18**	**4.96**	ND

ND = Not Detected at the Detection Limit.
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-30-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE52009	AE52010	AE52011	AE52012
Client Sample ID		4928A	4928B	Trip Blank	M. Blank
Date Sampled		09-21-98	09-21-98	09-21-98	09-21-98
Date Extracted		09-30-98	09-30-98	09-30-98	09-30-98
Date Analyzed		09-30-98	09-30-98	09-30-98	09-30-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**13.6**	**3.8**	ND	ND
1,1-Dichloroethane	0.5	**5.9**	**1.4**	ND	ND
1,2-Dichloroethane	0.5	**0.6**	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	**0.5**	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE52009	AE52010	AE52011	AE52012
Client Sample ID		4928A	4928B	Trip Blank	M. Blank
Date Sampled		09-21-98	09-21-98	09-21-98	09-21-98
Date Extracted		09-30-98	09-30-98	09-30-98	09-30-98
Date Analyzed		09-30-98	09-30-98	09-30-98	09-30-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**15.1**	**1.6**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	**1.5**	ND	ND	ND
Trichlorofluoromethane	1	ND	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-29-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Alkalinity Total as $CaCO_3$	310.1	09-28-98	100	100	<1	80	120	<15
Hardness Total as $CaCO_3$	130.2	09-29-98	100	100	<1	80	120	<15
Chemical Oxygen Demand	410.4	09-28-98	100	100	<1	80	120	<15
Sulfate	375.4	09-23-98	101	101	<1	80	120	<15
Surfactants(MBAS)	425.1	09-22-98	96	96	<1	80	120	<15
Nitrate as N	352.1	09-22-98	104	104	<1	80	120	<15
Nitrite as N	354.1	09-22-98	93	93	<1	80	120	<15
Chloride	325.3	09-28-98	100	100	<1	80	120	<15
Fluoride	340.2	09-28-98	100	100	<1	80	120	<15
Boron	SM4500B	09-29-98	101	102	1.0	80	120	<15
Aluminum	6010	09-24-98	106	107	<1	80	120	<15
Copper	6010	09-24-98	101	101	<1	80	120	<15
Cadmium	6010	09-24-98	103	103	<1	80	120	<15
Chromium (Total)	6010	09-24-98	103	104	1.0	80	120	<15
Nickel	6010	09-24-98	102	103	1.0	80	120	<15
Lead	6010	09-24-98	102	103	1.0	80	120	<15
Iron	6010	09-24-98	108	108	<1	80	120	<15
Calcium	6010	09-24-98	106	107	<1	80	120	<15
Magnesium	6010	09-24-98	106	106	<1	80	120	<15
Manganese	6010	09-24-98	101	102	1.0	80	120	<15
Potassium	6010	09-24-98	98	97	1.0	80	120	<15
Sodium	6010	09-24-98	105	105	<1	80	120	<15
Zinc	6010	09-24-98	104	104	<1	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-30-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		09-30-98	NA	NA
Date Analyzed		09-30-98	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	89	75	125
Bromobenzene	0.5	107	75	125
Bromochloromethane	0.5	90	75	125
Bromodichloromethane	0.5	113	75	125
Bromoform	0.5	110	75	125
Bromomethane	0.5	54	75	125
n-Butylbenzene	0.5	115	75	125
sec-Butylbenzene	0.5	115	75	125
tert-Butylbenzene	0.5	117	75	125
Carbon Tetrachloride	0.5	96	75	125
Chlorobenzene	0.5	109	75	125
Chloroethane	0.5	70	75	125
Chloroform	0.5	103	75	125
Chloromethane	0.5	50	75	125
2-Chlorotoluene	0.5	111	75	125
4-Chlorotoluene	0.5	107	75	125
Dibromochloromethane	0.5	105	75	125
Dibromomethane	1	94	75	125
1,2-Dibromo-3-Chloropropane	1	100	75	125
1,2-Dibromoethane	0.5	98	75	125
1,2-Dichlorobenzene	0.5	108	75	125
1,3-Dichlorobenzene	0.5	111	75	125
1,4-Dichlorobenzene	0.5	109	75	125
Dichlorodifluoromethane	0.5	120	75	125
1,1-Dichloroethane	0.5	100	75	125
1,2-Dichloroethane	0.5	94	75	125
1,1-Dichloroethene	0.5	75	75	125
cis-1,2-Dichloroethene	0.5	95	75	125
trans-1,2-Dichloroethene	0.5	79	75	125
1,2-Dichloropropane	0.5	99	75	125
1,3-Dichloropropane	0.5	108	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10149

EPA Method 524.2 (L/C) QA/QC DATA (Cont...)

QC	LCS	LCS LCL	LCS UCL
Date Extracted	09-30-98	NA	NA
Date Analyzed	09-30-98	NA	NA
Matrix	Aqueous	Aqueous	Aqueous
Units	%	%	%
Analyte / **DL**	**Results**	**Results**	**Results**
2,2-Dichloropropane / 0.5	104	75	125
1,1-Dichloropropene / 0.5	79	75	125
cis-1,3-Dichloropropene / 0.5	93	75	125
trans-1,3-Dichloropropene / 0.5	93	75	125
Ethylbenzene / 0.5	108	75	125
Freon 113 / 1	99	75	125
Hexachlorobutadiene / 0.5	121	75	125
Isopropylbenzene / 0.5	117	75	125
p-Isopropyltoluene / 0.5	113	75	125
Methylene Chloride / 1	168	75	125
Napathalene / 1	96	75	125
n-Propylbenzene / 0.5	112	75	125
Styrene / 0.5	112	75	125
1,1,1,2-Tetrachloroethane / 0.5	112	75	125
1,1,2,2-Tetrachloroethane / 1	103	75	125
Tetrachloroethene / 0.5	95	75	125
Toluene / 0.5	100	75	125
1,2,3-Trichlorobenzene / 1	105	75	125
1,2,4-Trichlorobenzene / 1	106	75	125
1,1,1-Trichloroethane / 0.5	101	75	125
1,1,2-Trichloroethane / 0.5	105	75	125
Trichloroethene / 0.5	95	75	125
Trichlorofluoromethane / 1	81	75	125
1,2,3-Trichloropropane / 1	98	75	125
1,2,4-Trimethylbenzene / 0.5	109	75	125
1,3,5-Trimethylbenzene / 0.5	111	75	125
Vinyl Chloride / 0.5	61	75	125
o-Xylene / 0.5	108	75	125
m & p Xylenes / 1	106	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit
NS = Not Spiked
NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/28/98	09/28/98	09/28/98	**Detection Limit**
Date Analyzed:	09/28/98	09/28/98	09/28/98	
COD	ND	ND	ND	6

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	100	100	<1

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: (524.2)
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE52009	AE52010	AE52011	AE52012	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/30/98	09/30/98	09/30/98	09/30/98	**Detection**
Date Analyzed:	09/30/98	09/30/98	09/30/98	09/30/98	**Limit**
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	1
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	1
1,2- Dichlorobenzene	ND	ND	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	13.6	3.8	ND	ND	0.5
1,1- Dichloroethane	5.9	1.4	ND	ND	0.5
1,2- Dichloroethane	0.6	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	0.5	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1
Hexachlorobutadiene	ND	ND	ND	ND	0.5
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
Methylene Chloride	ND	ND	ND	ND	1
Naphthalene	ND	ND	ND	ND	1

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Units: ug/L

Lab ID: / **Sample No:**	AE52009 4928A	AE52010 4928B	AE52011 TRIP BLANK	AE52012 METHOD BLANK	**Detection Limit**
N- Propylbenzene	ND	ND	ND	ND	0.5
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	1
Tetrachloroethene	15.1	1.6	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	1
1,2,4- Trichlorobenzene	ND	ND	ND	ND	1
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	1.5	ND	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1
1,2,3- Trichloropropane	ND	ND	ND	ND	1
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1

QUALITY CONTROL SUMMARY

Lab ID:	AE52009	AE52010	AE52011	AE52012
Surrogate Percent Recovery				
Bromofluorobenzene	79	77	73	83
1,2- Dichlorobenzene-d4	95	96	93	109

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	89	82	8
Chlorobenzene	109	98	10
1,1- Dichloroethene	75	71	5
Toluene	100	90	10
Trichloroethene	95	85	10

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/21/98	09/21/98	09/21/98	**Detection**
Date Analyzed:	09/29/98	09/29/98	09/29/98	**Limit**
Alkalinity by Titration				
Bicarbonate (as CaCO3)	358	438	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	358	438	ND	2
Calculation				
Anions Total (meq/L)	8.40	9.58	ND	0.01
Cations Total (meq/L)	8.36	10.00	ND	0.01
Ion Balance, (Percent)	0.23	2.14	ND	0.01
General				
Chloride (Cl), total	29	39	ND	1
Conductivity (umhos/cm @ 77F	816	1020	ND	10
Fluoride (F), total	0.4	0.3	ND	0.2
Hardness (Ca,Mg) as CaCO3	520	330	ND	2
Nitrate (as N), total	5.0	1.4	ND	0.1
Nitrite (as N), total	ND	0.06	ND	0.02
PH (pH units)	7.04	7.09	ND	1.00
Sulfate (SO4)	64	57	ND	10
Surfactants (MBAS)	ND	ND	ND	0.05
Total Dissolved Solids	528	618	ND	10
Metals				
Aluminum (Al)	ND	2.7	ND	0.1
Calcium (Ca)	96.6	71.5	ND	0.5
Copper (Cu)	ND	ND	ND	0.02
Iron (Fe)	0.95	44.5	ND	0.05
Magnesium (Mg)	24.6	21.9	ND	0.5
Manganese (Mn)	0.01	0.23	ND	0.01
Potassium (K)	5.0	7.2	ND	1.0
Sodium (Na)	31.2	101	ND	0.5
Zinc (Zn)	0.18	4.96	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

QUALITY CONTROL SUMMARY

Lab ID:	AE52009	AE52010	AE52012
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	100	100	<1
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate (as N), total	104	104	<1
Nitrite (as N), total	93	93	<1
Sulfate (SO4)	101	101	<1
Surfactants (MBAS)	96	96	<1
Metals			
Aluminum (Al)	106	107	<1
Calcium (Ca)	106	107	<1
Copper (Cu)	101	101	<1
Iron (Fe)	108	108	<1
Magnesium (Mg)	106	106	<1
Manganese (Mn)	101	102	1
Potassium (K)	98	97	1
Sodium (Na)	105	105	<1
Zinc (Zn)	104	104	<1

ND - Not Detected at The Detection Limit

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2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/29/98	09/29/98	09/29/98	**Detection**
Date Analyzed:	09/29/98	09/29/98	09/29/98	**Limit**
Boron (B)	**0.4**	**0.3**	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	101	102	1

ND - Not Detected at The Detection Limit

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American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank. CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/22/98	09/22/98	09/22/98	**Detection**
Date Analyzed:	09/24/98	09/24/98	09/24/98	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	ND	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

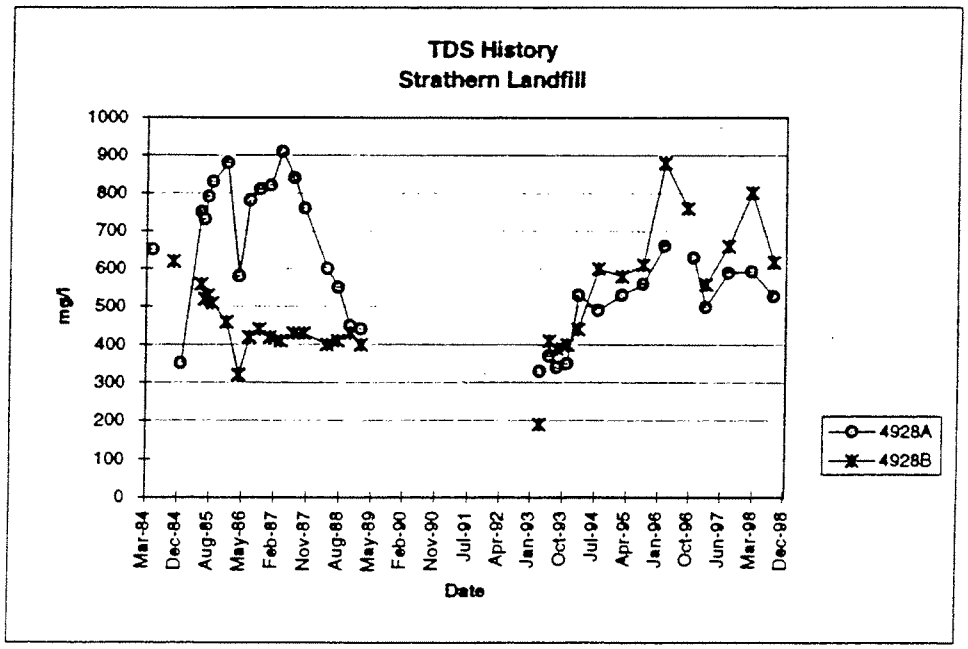
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	103	103	<1
Chromium (Cr)	103	104	1
Lead (Pb)	102	103	1
Nickel (Ni)	102	103	1

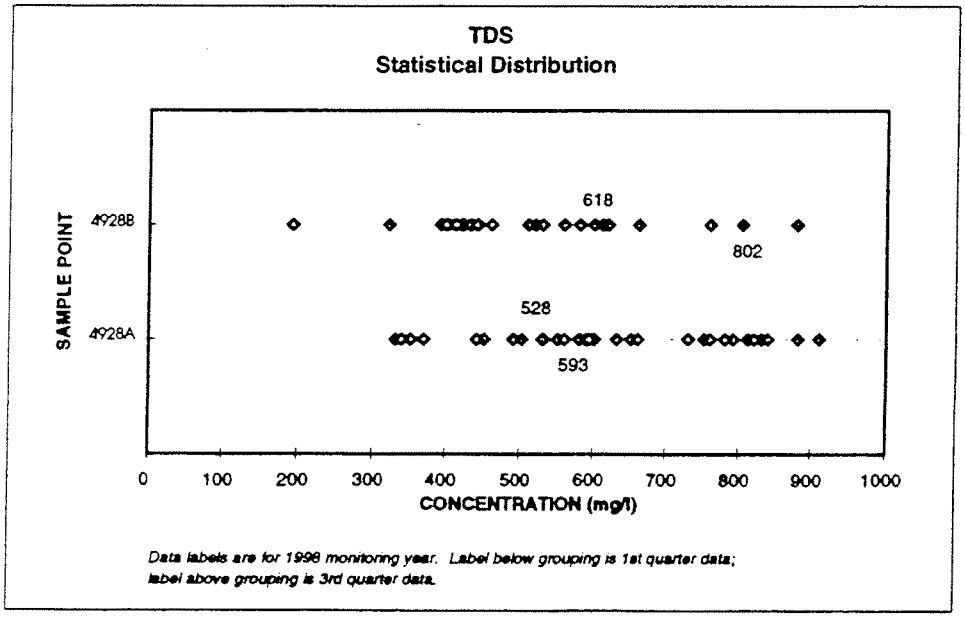
ND - Not Detected at The Detection Limit

APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

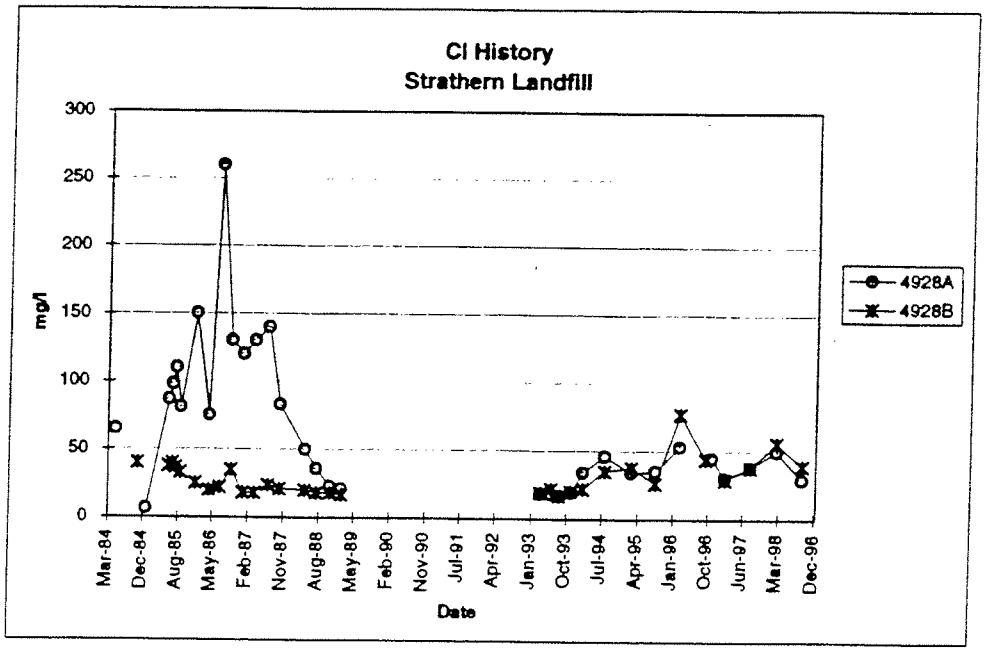
JOB 0111-20346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

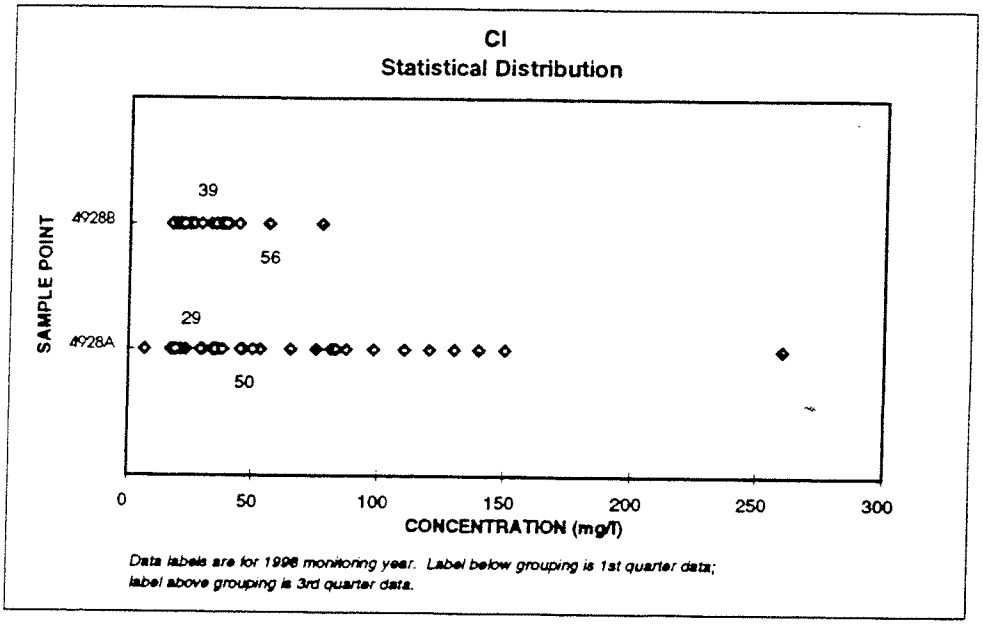




LAW/CRANDALL

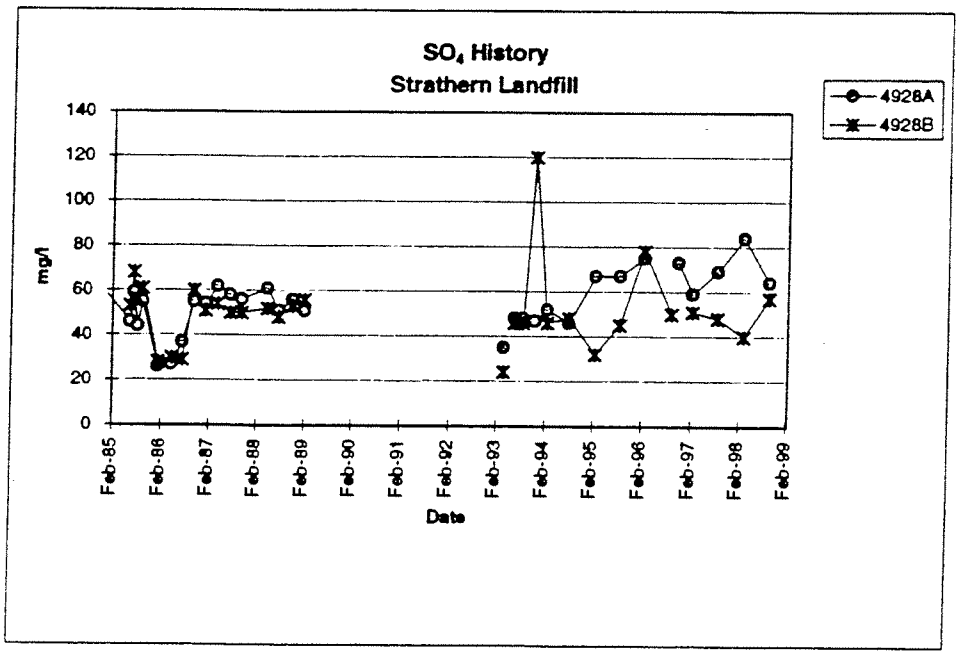
JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

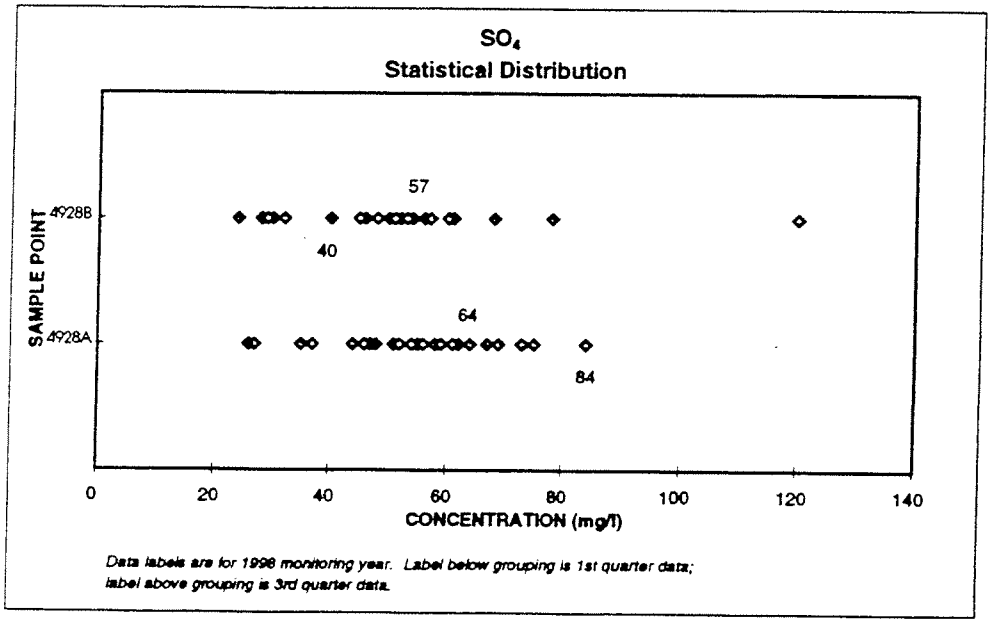




LAW/CRANDALL

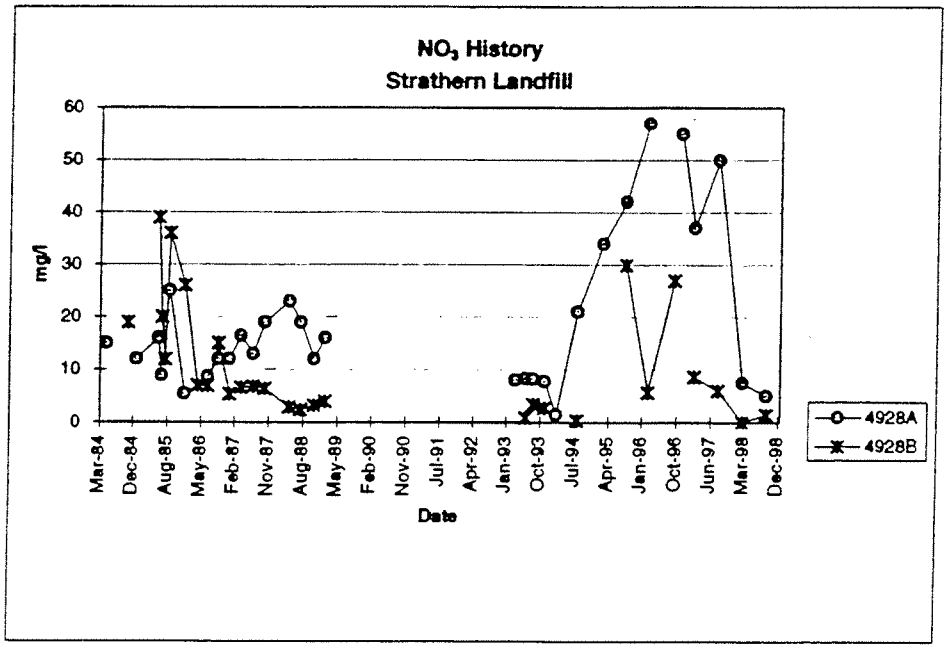
JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____

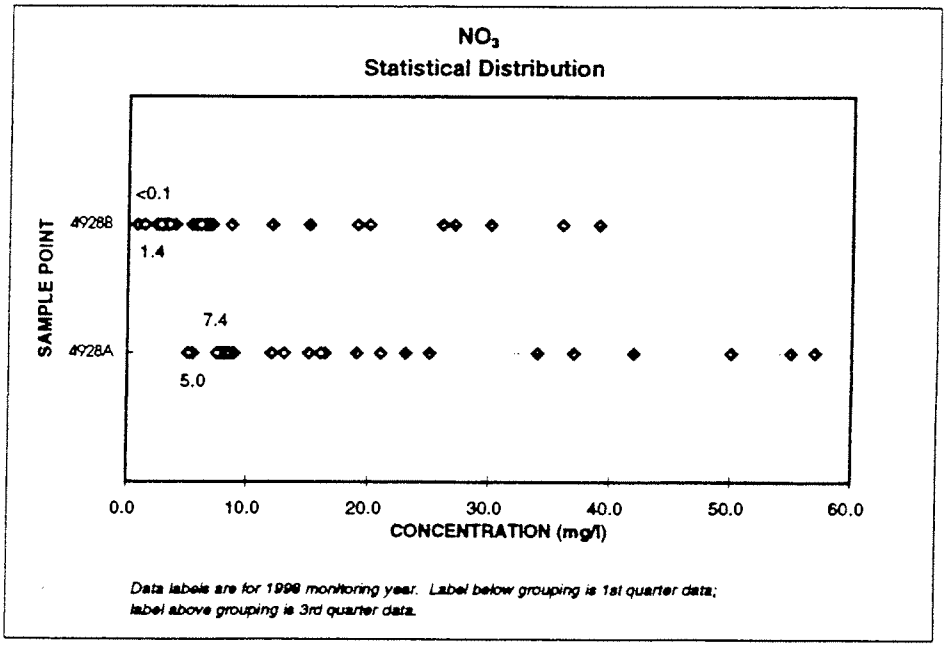




LAW/CRANDALL

JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____





LAW/CRANDALL

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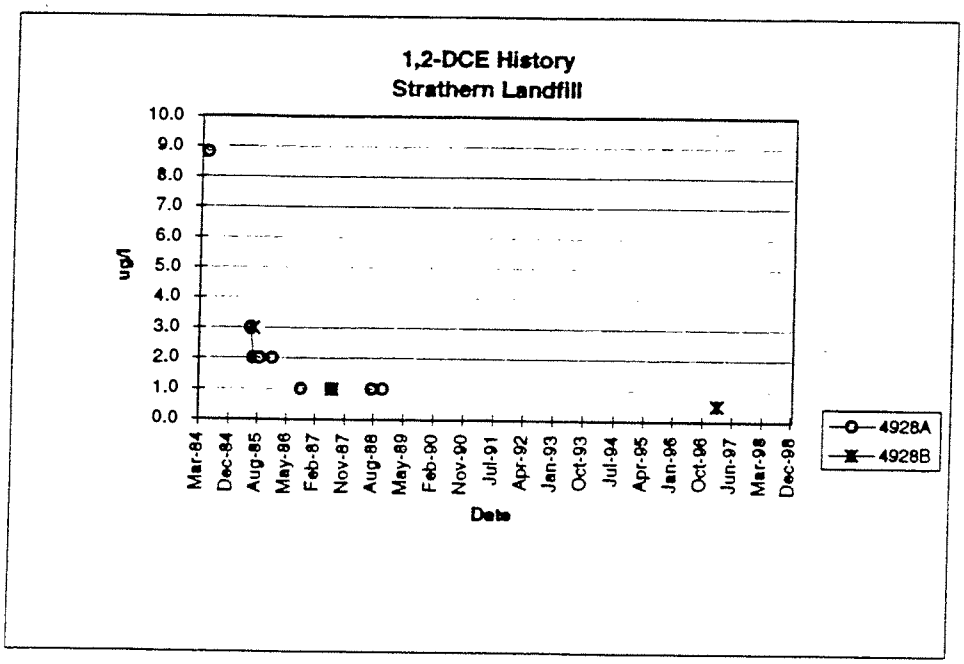

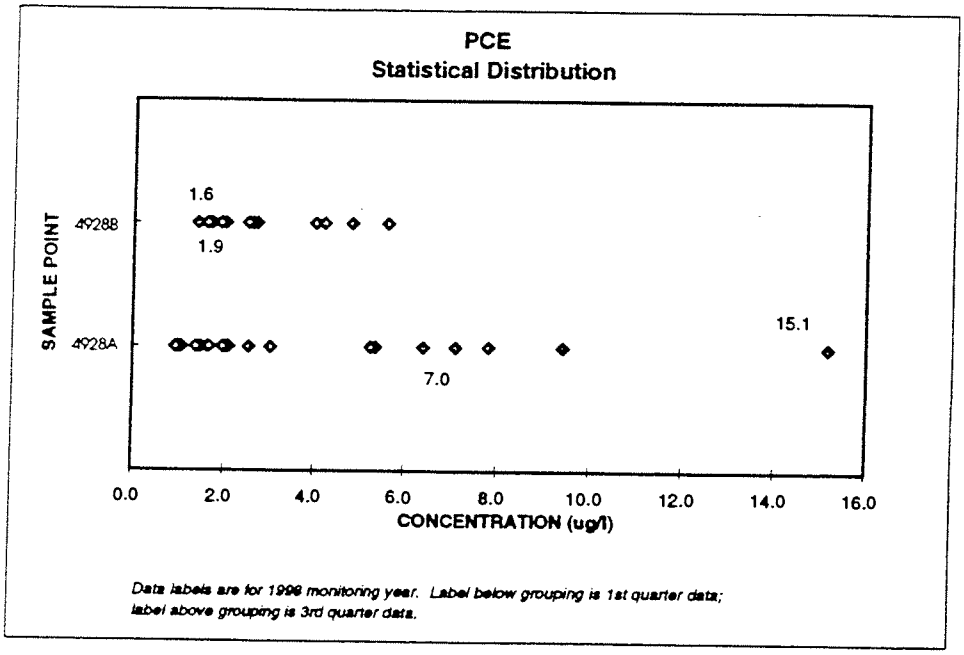

LAW/CRANDALL

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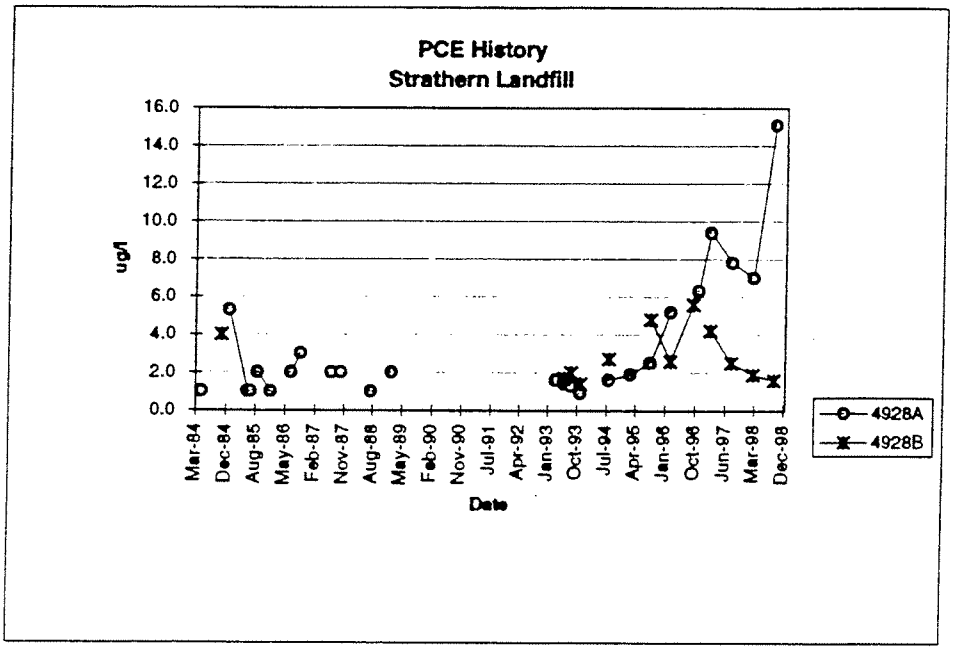
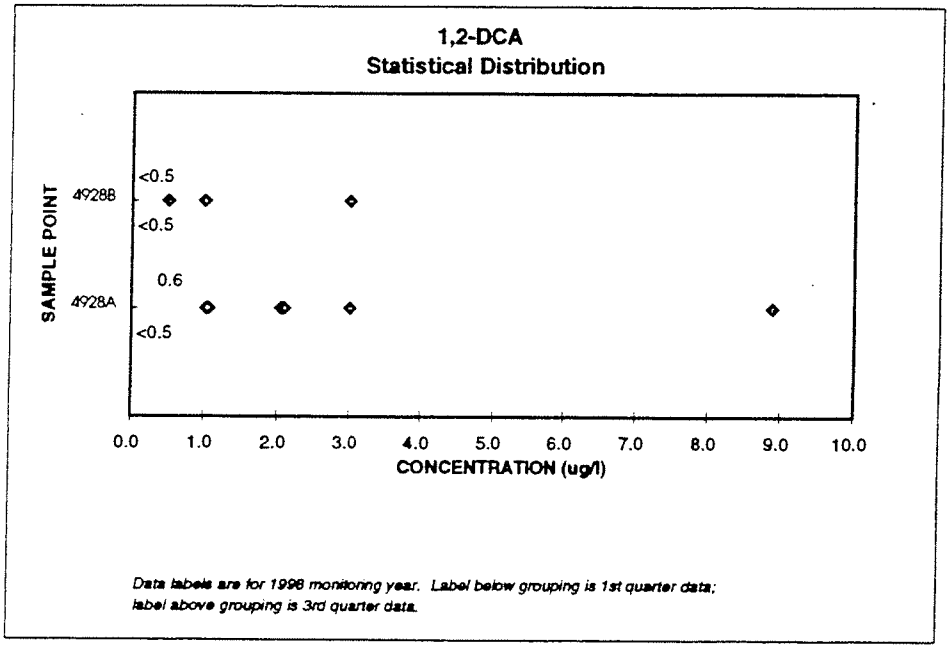




LAW/CRANDALL

CONFIDENTIAL

LAW Crandall
LAWGIBB Group Member

GROUNDWATER MONITORING REPORT
THIRD QUARTER 1998

STRATHERN LANDFILL

Sun Valley District
Los Angeles, California

RWQCB CI 7055

Prepared for

LOS ANGELES BY-PRODUCTS COMPANY

Los Angeles, California

Prepared by

Law/Crandall

Los Angeles, California

November 5, 1998

Law/Crandall Project 70111-2-0346

003745

LAW Crandall
LAWGIBB Group Member

November 5, 1998

Mr. Mike McAllister
President
Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **Third Quarter 1998**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the third quarter 1998 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area rose about 16 feet between the first quarter 1998 and third quarter 1998. Groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, total dissolved solids (TDS), tetrachloroethene (PCE) and 1,1-dichloroethane (1,1-DCA) in downgradient well 4928A and iron, manganese and TDS in upgradient well 4928B. Waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the third quarter 1998 groundwater monitoring results. Law/Crandall collected groundwater samples on September 21, 1998 and prepared this report.

American Environmental Testing Laboratory, Inc. (AETL) analyzed the groundwater samples. AETL is certified for such analyses by the State Department of Health Services.

MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

003747

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the third quarter 1998 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in September 1998. The water level at 4928A rose 14.78 feet and the water level at 4928B rose 16.70 feet since March 1998. The Los Angeles County Department of Public Works spread about 16,000 acre-feet of water at Hansen, Branford, and Tujunga spreading grounds from April 1998 through August 1998.

Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the historic water level data. We contoured the groundwater levels for September 1998. Figure 4 shows the groundwater contours.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the south during September, we used K in both the north-south, east-west direction for our flow velocity calculation. The groundwater gradient at the site was 0.0012 ft/ft in September. Groundwater flow for September was 0.36 ft/day or 131 ft/year.

GROUNDWATER QUALITY

We collected groundwater samples on September 21, 1998 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for general minerals, metals (cadmium, chromium, nickel, lead), boron, chemical oxygen demand, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from AETL of groundwater samples collected during the third quarter of 1998. Appendix C also contains the chain-of-custody records

Inorganics

Laboratory analyses indicated that during the third quarter, the groundwater met California Drinking Water Standards for most inorganic constituents. However, in downgradient well 4928A, levels of iron and total dissolved solids (TDS) exceeded drinking water limits. In upgradient well 4928B, levels of iron, manganese and TDS exceeded drinking water limits. Table 2 shows selected third quarter 1998 results compared to California Drinking Water Standards.

003749

Table 2: Site Water Quality vs. California Drinking Water Standards, 3rd Quarter 1998

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A (downgradient) September 1998	4928B (upgradient) September 1998
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	528	618
Chloride (Cl)	250	29	39
Sulfate (SO_4)	250	64	57
Nitrate (NO_3)	45	5.0	1.4
Iron (Fe)	0.3	0.95	44.5
Manganese (Mn)	0.05	0.01	0.23
Zinc (Zn)	5	0.18	4.96
Organic (µg/L)			
Trichloroethene (TCE)	5	1.5	<0.5
Tetrachloroethene (PCE)	5	15.1	1.6
Trichlorofluoromethane	150	<1	<1
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5
1,1-dichloroethane (1,1-DCA)	5	5.9	1.4
cis-1,2-dichloroethene (cis-1,2-DCE)	6	0.5	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5

* *Source: CCR, Title 22, Division 4, Chapter 15*

The TDS level in both downgradient well 4928A and upgradient 4928B have decreased since the first quarter of 1998. However, the levels of TDS in the wells remain above drinking water standards.

The iron concentration in downgradient well 4928A increased during the first quarter 1998. Iron concentrations in this well have increased since the third quarter of 1997. The iron concentration in upgradient well 4928B decreased since the last reporting period. However, the concentration is still above drinking water standards. No definite pattern with respect to iron has emerged from the data obtained to date.

Manganese levels increased in upgradient well 4928B since the first quarter of 1998 and have been above the drinking water standard since the third quarter of 1993.

003750

Organics

During the third quarter, trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethane (1,1-DCA) and cis-1,2-dichloroethene were detected in downgradient well 4928A. Upgradient well 4928B contained trace amounts of PCE and 1,1-DCA. Organic levels were below California Drinking Water Standards except for PCE and 1,1-DCA in downgradient well 4928A. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have increased about 16 feet since the first quarter 1998 monitoring and reporting period. The increase in groundwater levels appears to be the result of heavy precipitation experienced in the southern California region during the winter and spring of 1998. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination is low. PCE and 1,1-DCA are present in both the upgradient and downgradient wells, suggesting that the landfill is not the source of the contamination. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (323) 889-5300.

Sincerely,

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Darren R. Ness
Staff Scientist

William J. O'Braitis, R.G. 6062
Principal Geologist

\70111\92_PROJ\20346\98\034698Q3.DOC/DRN:swb
(2 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

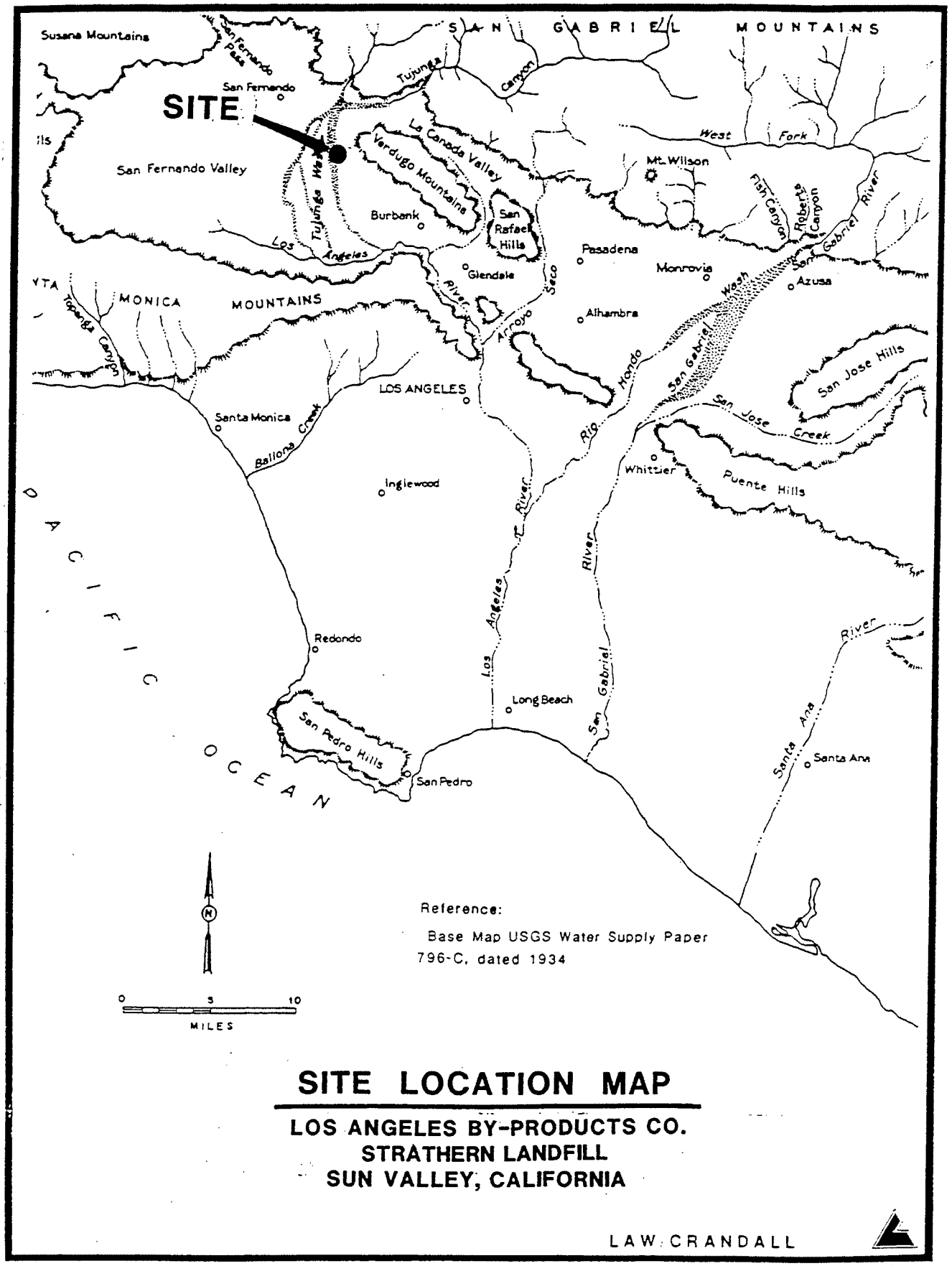
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 6TH day of NOVEMBER, 1998, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL

FIGURE 1

003754

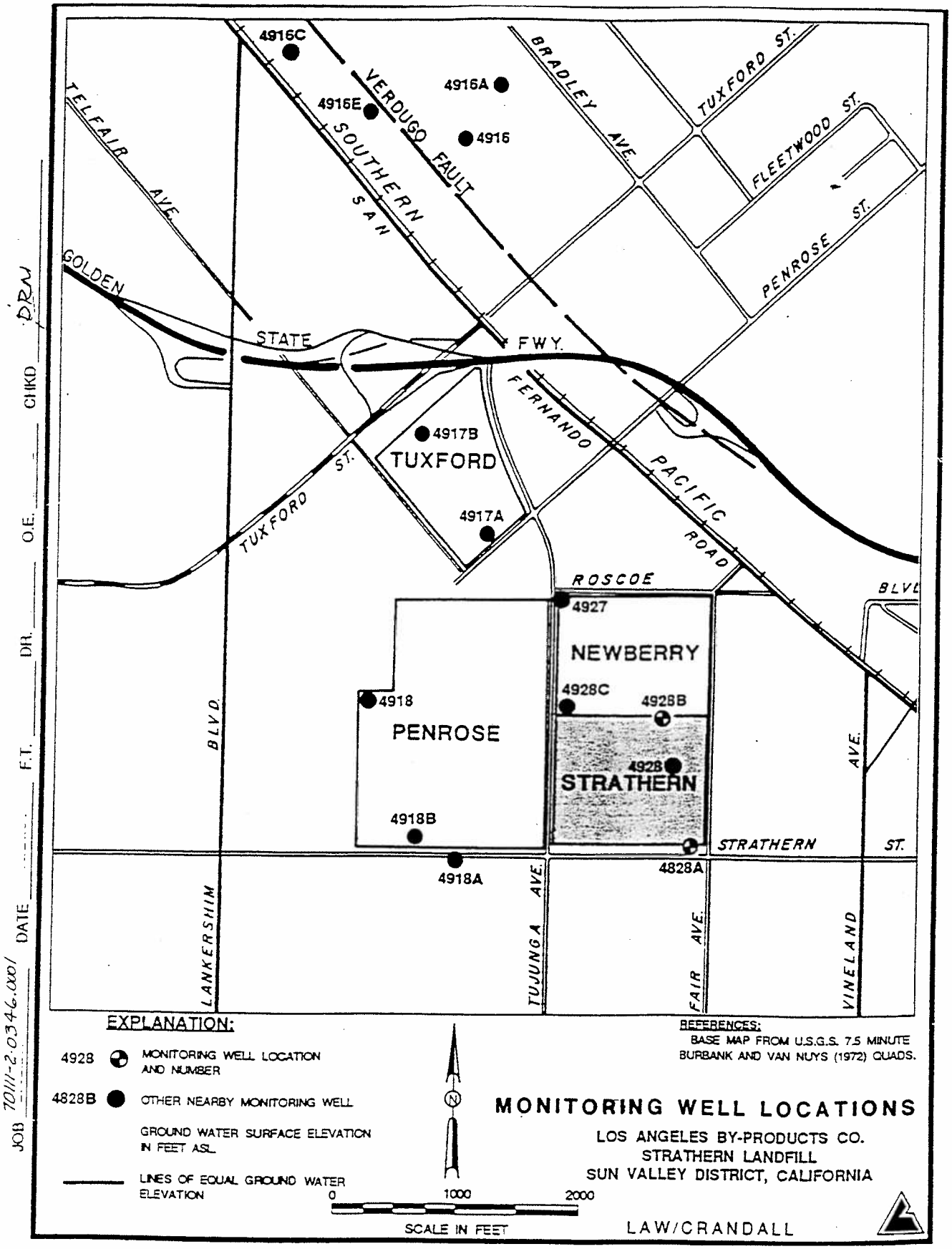
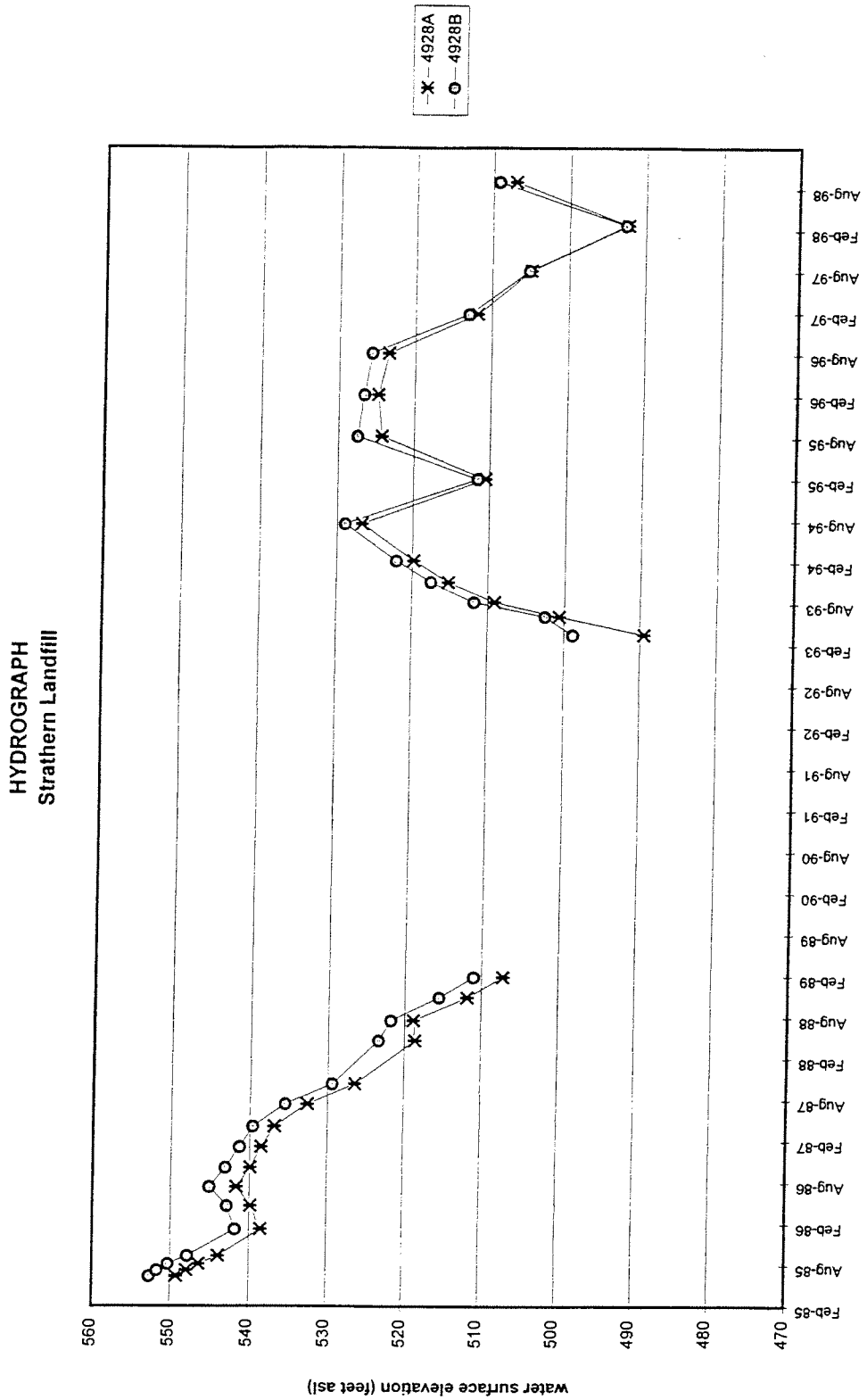

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN
SAN
BRADLEY AVE
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE
GOLDEN
STATE
FWY.
4917B
TUXFORD
4917A
FERNANDO
PACIFIC
ROAD
TUXFORD ST.
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4928
STRATHERN
4918
PENROSE
4918B
4918A
4828A
STRATHERN ST.
BLVD.
AVE.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL
LINES OF EQUAL GROUND WATER ELEVATION
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
0
1000
2000
SCALE IN FEET
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL
DRN
CHKD
O.E.
DR.
F.T.
DATE
JOB 7011-2.0346.001

FIGURE 2

JOB 70111-2-0346.0001 DATE _____ F.T. _____ DR. _____ O.E. DZW CHKD _____



LAW/CRANDALL

FIGURE 3

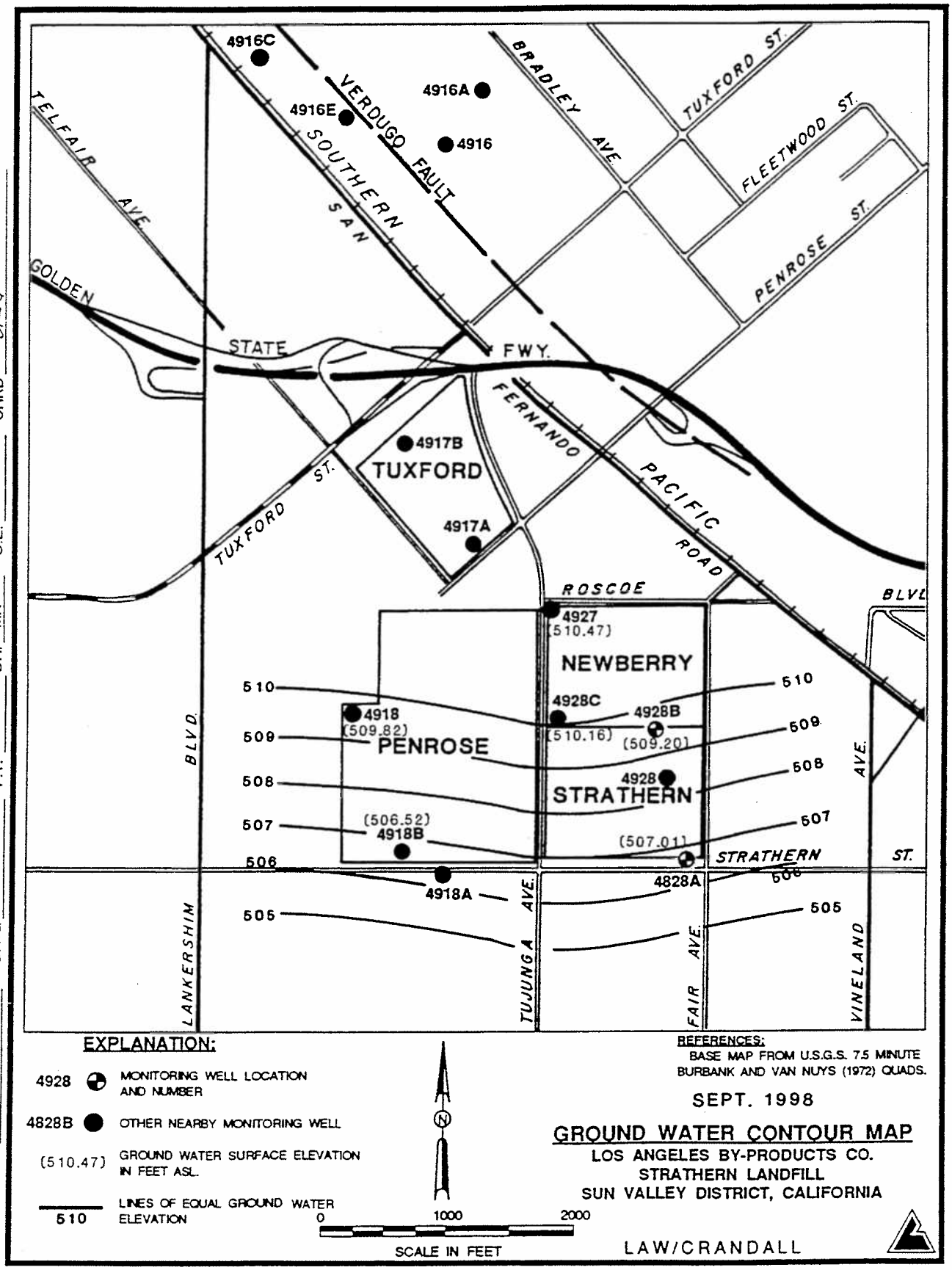

4916C
4916E
4916A
4916
VERDUGO FAULT
SOUTHERN SAN
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN STATE
FWY.
FERNANDO
4917B
TUXFORD
4917A
TUXFORD ST.
PACIFIC ROAD
ROSCOE BLVD.
4927
(510.47)
NEWBERRY
4928C
(510.16)
4928B
(509.20)
4928
STRATHERN
4918
(509.82)
PENROSE
(506.52)
4918B
(507.01)
4918A
4828A
STRATHERN ST.
BLVD.
AVE.
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
510
509
508
507
506
505
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
(510.47) GROUND WATER SURFACE ELEVATION IN FEET ASL.
510 LINES OF EQUAL GROUND WATER ELEVATION
0 1000 2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
SEPT. 1998
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL
DRJ
CHKD
O.E.
DR. MN
F.T.
DATE 10/21/94
70111-2-0346.0001

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. DRM CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)						LABORATORY ANALYSES								GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803.78								7.2	120	28	46	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	6.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	61	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	65	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	66	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	46	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<8		
4928A	12-Mar-98		492.23	7.3	68	881	36	320	890	7.3	101	27	34	6.4	<2.0	320	84	50	7.4	0.6	0.40	593	<10		
4928A	21-Sep-98		507.01	7.2	66	765	25	340	816	7.0	97	25	31	5.0	<2	356	64	29	5.0	0.4	0.40	528	<6		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

CONFIDENTIAL

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. DRN CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.088	<0.09		0.290				0.870	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.080		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.280				0.800	B&C
4928A	18-Jan-86	<1	1	2								<0.033	<0.083		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.580	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.480	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-98	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.080	0.027	<0.04		1.5	B&C
4928A	23-Aug-98	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC
4928A	12-Mar-98	0.80	7.0	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.54	AETL
4928A	21-Sep-98	1.50	15.1	0.6	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.95		0.01	<0.05	<0.04		0.18	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003760

CONFIDENTIAL

JOB _____ DATE _____ F.I. _____ DR. _____ O.E. DRN CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

POINT	DATE	WATER LEV (ft.) REF PT.	WATER LEV (ft.) W S E	FIELD MEAS. (ppm) fpH	FIELD MEAS. (ppm) T(f)	FIELD MEAS. (ppm) fEC	FIELD MEAS. (ppm) CO2	FIELD MEAS. (ppm) Alk	LABORATORY ANALYSES EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	GENERAL MINERAL(ppm) B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	80	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	68.0	392	870	7.1	82	24	92	8.3	0.0	450	53	38	39.0			580	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	8.2	0.0	450	88	40	20.0			520	0.08	8.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	58	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	38.0			510	<0.05	<3	
4928B	16-Jan-86		541.62	7.2	68	750		321	750	7.2	107	22	38	4.4	0.0	340	28	25	28.0			460	<0.05	<3	
4928B	29-Apr-86		542.66	8.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	820	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	8.9			420	0.12	8.0	
4928B	15-Oct-86		543.10	8.0	68	890	33.5	255	680	7.8	87	10	29	4.2	0.0	280	80	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	8.7	68	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.83	8.2	85	450	25.0	250	680	7.0	80	22	33	4.0	<0.8	340	54	18	6.8	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	8.8	70	550	8.0	290	720	7.4	87	25	38	4.3	<0.8	350	50	24	8.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	68	485	85.0	291	740	7.9	90	22	35	5.0	<0.8	370	50	21	8.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.8	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.8	358	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	88	335	25.0	338	680	7.5	85	20	30	3.9	<0.8	350	48	18	2.4	0.19	0.40	410	8.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.8	380	53	18	3.2	0.18	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	8.6	68	670	23.0	372	680	7.3	85	24	38	4.8	<0.8	350	58	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	198	410	8.1	26	19	34	4.7	<0.8	230	24	19	<0.2		0.28	190	<8		
4928B	22-Jun-93		502.48	7.8	69	500	45	300	690	7.0	70	26	39	8.2	<0.8	370	48	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	800	50	286	880	8.5	82	22	32	5.0	<0.8	370	48	17	3.4		0.38	390	<8		
4928B	19-Nov-93		517.50	7.8	87	550	33	320	690	7.1	93	25	37	5.5	<0.8	370	120	20	2.7		0.38	400	<8		
4928B	21-Feb-94		522.09	7.3	89	525	65	332	730	7.1	100	27	38	8.0	<0.8	430	48	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	88	950	NA	528	1000	8.8	130	35	39	8.0	<1	500	48	35	0.31	0.27	0.41	800			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.8	550	32	38	<0.1	<0.05	0.44	580	8.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	38	42	5.9	<10	550	45	28	30	<0.2	0.15	810	<8		
4928B	23-Feb-96		526.80	7.2	75	820	35	548	1400	8.8	190	54	52	8.5	<10	890	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.81	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	8.9	180	43	48	8.1	<0.8	830	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.8	69	930	79	540	910	7.0	110	31	38	5.8	0	500	51	29	8.8	<0.2	0.45	560	15		
4928B	28-Aug-97		505.13	7.1	71.5	1120	88	580	1000	8.6	150	41	45	8.4	0	800	48	38	8	0.21	0.25	880	34		
4928B	12-Mar-98		492.50	7.0	73.8	1152	NA	502	1110	7.0	97	35	81	9	<2.0	502	40	58	<0.1	0.5	0.2	802	<10		
4928B	21-Sep-98		509.2	7.3	69.6	835	NA	285	1020	7.1	72	22	101	7.2	<2	436	57	39	1.4	0.3	0.3	818	<8		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

CONFIDENTIAL

003761

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. DRN CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.088	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.08		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.048		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.087	B&C
4928B	18-Jan-88	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-88	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-88	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.08	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.88	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.38	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.8	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.018	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.28	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0078	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.8	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.28	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.083		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.28	<0.05	<0.04		0.48	VOC
4928B	12-Mar-98	0.5	1.9	<0.5	<0.5	<0.5	0.7			<0.005	<0.01	0.02	51.5		0.18	0.14	<0.04		7.98	AETL
4928B	21-Sep-98	<0.5	1.6	<0.5	<0.5	<0.5	2.7			<0.005	<0.01	<0.02	44.5		0.23	<0.05	<0.04		4.98	AETL

NM = Not measured
NS = Not sampled

LAW/CRANDALL

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will reduce potential cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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American Environmental Testing Laboratory Inc.

2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541. LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Number of Pages: 14
Date Received : 09/21/98
Date Reported : 10/02/98

Attn : Darren Ness
Phone: 323/889-5300

AETL Job Number: 10689

Project Name : Strathern
Project Number : 70111-7-0346

Site: Sun Valley

Enclosed please find results of analyses of 3 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: Joe Seaman

Approved By: C Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

003768

AETL

American Environmental Testing Laboratory Inc.
2834 North Naomi Street, Burbank, California 91504, Phone (888) 288-AETL, (818) 845-8200
Fax (818) 845-8840

AETL JOB# 10689 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT: LAW / CRANDALL
TELEPHONE: 323-889-5300
FAX: 323-721-6700
ADDRESS: 200 CITADEL DRIVE LOS ANGELES, CA 90040-1554
SITE: SUN VALLEY
CONTACT PERSON: D. NESS
PROJECT NAME: STRATHERN
PROJECT NUMBER: 70111-2-0346

ANALYSIS REQUESTED

SAMPLE ID	LAB ID	DATE	TIME	CONTAINER SIZE/TYPE	SAMPLE TYPE: SOIL	WATER	SOLID WASTE	LIQUID WASTE	OTHER	PRES.	GENERAL MINERALS	BORON	COD	524.2	Cd, Cr, Ni, Pb								REMARKS
4928 A	AE52009	9/21/98	1245	VARIOUS		X				COOLER	X	X	X	X	X								FILTER
4928 B	AE52010	9/21/98	1115	VARIOUS		X				COOLER	X	X	X	X	X								METALS
TRIP BLANK	AE52011													X									

Collected By: DARREN R. NESS Date 9/21/98 Time 1245
Relinquished By: [signature] Date 9/21/98 Time 1330
Turn Around Time ☒ Normal ☐ Rush

Delivered By: [signature] Date 9/21/98 Time 1330
Received For Laboratory [signature] Date 9-21-98 Time 1330

003769

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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-29-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

				Lab ID	AE52009	AE52010	AE52011
				Client ID	4928A	4928B	M. Blank
				Date Sampled	09-21-98	09-21-98	09-21-98
				Matrix	Aqueous	Aqueous	Aqueous
Analyte	**Method**	**Units**	**DL**	**Date Analyzed**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	**358**	**438**	ND
Carbonate Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	ND	ND	ND
Hydroxide Alk. as $CaCO_3$	SM2320B	mg/L	2	09-28-98	ND	ND	ND
Alkalinity Total as $CaCO_3$	310.1	mg/L	2	09-28-98	**358**	**438**	ND
Hardness Total as $CaCO_3$	130.2	mg/L	2	09-29-98	**520**	**330**	ND
Total Dissolved Solids	160.1	mg/L	10	09-23-98	**528**	**618**	ND
Chemical Oxygen Demand	410.4	mg/L	6	09-28-98	ND	ND	ND
Specific Conductance	120.1	umhos/cm	10	09-29-98	**816**	**1,020**	ND
pH	150.1	std. unit	1.00	09-21-98	**7.04**	**7.09**	ND
Sulfate	375.4	mg/L	10	09-23-98	**64**	**57**	ND
Surfactants(MBAS)	425.1	mg/L	0.05	09-22-98	ND	ND	ND
Nitrate as N	352.1	mg/L	0.1	09-22-98	**5.0**	**1.4**	ND
Nitrite as N	354.1	mg/L	0.02	09-22-98	ND	**0.06**	ND
Chloride	325.3	mg/L	1	09-28-98	**29**	**39**	ND
Fluoride	340.2	mg/L	0.2	09-28-98	**0.4**	**0.3**	ND
Boron	SM4500B	mg/L	0.2	09-29-98	**0.4**	**0.3**	ND
Anions Total	Calc.	meq/L	0.01	09-29-98	**8.40**	**9.58**	NA
Cations Total	Calc.	meq/L	0.01	09-29-98	**8.36**	**10.00**	NA
Ion Balance	Calc.	%	0.01	09-29-98	**0.23**	**2.14**	NA
Aluminum	6010	mg/L	0.1	09-24-98	ND	**2.7**	ND
Copper	6010	mg/L	0.02	09-24-98	ND	ND	ND
Cadmium	6010	mg/L	0.005	09-24-98	ND	ND	ND
Chromium (Total)	6010	mg/L	0.01	09-24-98	ND	ND	ND
Nickel	6010	mg/L	0.04	09-24-98	ND	ND	ND
Lead	6010	mg/L	0.05	09-24-98	ND	ND	ND
Iron	6010	mg/L	0.05	09-24-98	**0.95**	**44.5**	ND
Calcium	6010	mg/L	0.5	09-24-98	**96.6**	**71.5**	ND
Magnesium	6010	mg/L	0.5	09-24-98	**24.6**	**21.9**	ND
Manganese	6010	mg/L	0.01	09-24-98	**0.01**	**0.23**	ND
Potassium	6010	mg/L	1.0	09-24-98	**5.0**	**7.2**	ND
Sodium	6010	mg/L	0.5	09-24-98	**31.2**	**101**	ND
Zinc	6010	mg/L	0.03	09-24-98	**0.18**	**4.96**	ND

ND = Not Detected at the Detection Limit.
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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SUMMARY OF RESULTS

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-30-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C)

Lab ID		AE52009	AE52010	AE52011	AE52012
Client Sample ID		4928A	4928B	Trip Blank	M. Blank
Date Sampled		09-21-98	09-21-98	09-21-98	09-21-98
Date Extracted		09-30-98	09-30-98	09-30-98	09-30-98
Date Analyzed		09-30-98	09-30-98	09-30-98	09-30-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	0.5	ND	ND	ND	ND
Bromochloromethane	0.5	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
Dibromomethane	1	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	1	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	**13.6**	**3.8**	ND	ND
1,1-Dichloroethane	0.5	**5.9**	**1.4**	ND	ND
1,2-Dichloroethane	0.5	**0.6**	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	**0.5**	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

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SUMMARY OF RESULTS (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

EPA Method 524.2 (L/C)(Cont...)

Lab ID		AE52009	AE52010	AE52011	AE52012
Client Sample ID		4928A	4928B	Trip Blank	M. Blank
Date Sampled		09-21-98	09-21-98	09-21-98	09-21-98
Date Extracted		09-30-98	09-30-98	09-30-98	09-30-98
Date Analyzed		09-30-98	09-30-98	09-30-98	09-30-98
Matrix		Aqueous	Aqueous	Aqueous	Aqueous
Units		µg/L	µg/L	µg/L	µg/L
Dilution Factor		1	1	1	1
Analyte	**DL**	**Results**	**Results**	**Results**	**Results**
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Freon 113	1	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene Chloride	1	ND	ND	ND	ND
Napathalene	1	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND
Tetrachloroethene	0.5	**15.1**	**1.6**	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	1	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	**1.5**	ND	ND	ND
Trichlorofluoromethane	1	ND	ND	ND	ND
1,2,3-Trichloropropane	1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	1	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND	ND
o-Xylene	0.5	ND	ND	ND	ND
m & p Xylenes	1	ND	ND	ND	ND

ND = Not Detected at the Detection Limit
DL = Detection Limit

Cyrus Razmara, Ph.D.
Laboratory Director

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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-29-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

QA/QC DATA FOR WET CHEMISTRY AND METALS

		TYPE OF QC	MS	MSD	RPD	MS/MSD LCL	MSMSD UCL	RPD UCL
		Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
		Units	%	%	%	%	%	%
Analysis	**Method**	**Date Analyzed**	**Results**	**Results**	**Results**	**Results**	**Results**	**Results**
Bicarbonate Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Carbonate Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Hydroxide Alk. as $CaCO_3$	SM2320B	09-28-98	100	100	<1	80	120	<15
Alkalinity Total as $CaCO_3$	310.1	09-28-98	100	100	<1	80	120	<15
Hardness Total as $CaCO_3$	130.2	09-29-98	100	100	<1	80	120	<15
Chemical Oxygen Demand	410.4	09-28-98	100	100	<1	80	120	<15
Sulfate	375.4	09-23-98	101	101	<1	80	120	<15
Surfactants(MBAS)	425.1	09-22-98	96	96	<1	80	120	<15
Nitrate as N	352.1	09-22-98	104	104	<1	80	120	<15
Nitrite as N	354.1	09-22-98	93	93	<1	80	120	<15
Chloride	325.3	09-28-98	100	100	<1	80	120	<15
Fluoride	340.2	09-28-98	100	100	<1	80	120	<15
Boron	SM4500B	09-29-98	101	102	1.0	80	120	<15
Aluminum	6010	09-24-98	106	107	<1	80	120	<15
Copper	6010	09-24-98	101	101	<1	80	120	<15
Cadmium	6010	09-24-98	103	103	<1	80	120	<15
Chromium (Total)	6010	09-24-98	103	104	1.0	80	120	<15
Nickel	6010	09-24-98	102	103	1.0	80	120	<15
Lead	6010	09-24-98	102	103	1.0	80	120	<15
Iron	6010	09-24-98	108	108	<1	80	120	<15
Calcium	6010	09-24-98	106	107	<1	80	120	<15
Magnesium	6010	09-24-98	106	106	<1	80	120	<15
Manganese	6010	09-24-98	101	102	1.0	80	120	<15
Potassium	6010	09-24-98	98	97	1.0	80	120	<15
Sodium	6010	09-24-98	105	105	<1	80	120	<15
Zinc	6010	09-24-98	104	104	<1	80	120	<15

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
LCL = Lower Control Limit
UCL = Upper Control Limit

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Laboratory Director

American Environmental Testing Laboratory Inc.
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QA/QC DATA

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10689

PROJECT: Strathern-70111-2-0346
SITE: Sun Valley-Strathern
DATE SAMPLED: 09-21-98
DATE SUBMITTED: 09-21-98
DATE ANALYSIS COMPLETED: 09-30-98
SAMPLE DESCRIPTION: Grab Water Samples (For details, please see COC)
SAMPLE MATRIX: Aqueous
NOTE: Samples were collected by the client

EPA Method 524.2 (L/C) QA/QC DATA

QC		LCS	LCS LCL	LCS UCL
Date Extracted		09-30-98	NA	NA
Date Analyzed		09-30-98	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
Benzene	0.5	89	75	125
Bromobenzene	0.5	107	75	125
Bromochloromethane	0.5	90	75	125
Bromodichloromethane	0.5	113	75	125
Bromoform	0.5	110	75	125
Bromomethane	0.5	54	75	125
n-Butylbenzene	0.5	115	75	125
sec-Butylbenzene	0.5	115	75	125
tert-Butylbenzene	0.5	117	75	125
Carbon Tetrachloride	0.5	96	75	125
Chlorobenzene	0.5	109	75	125
Chloroethane	0.5	70	75	125
Chloroform	0.5	103	75	125
Chloromethane	0.5	50	75	125
2-Chlorotoluene	0.5	111	75	125
4-Chlorotoluene	0.5	107	75	125
Dibromochloromethane	0.5	105	75	125
Dibromomethane	1	94	75	125
1,2-Dibromo-3-Chloropropane	1	100	75	125
1,2-Dibromoethane	0.5	98	75	125
1,2-Dichlorobenzene	0.5	108	75	125
1,3-Dichlorobenzene	0.5	111	75	125
1,4-Dichlorobenzene	0.5	109	75	125
Dichlorodifluoromethane	0.5	120	75	125
1,1-Dichloroethane	0.5	100	75	125
1,2-Dichloroethane	0.5	94	75	125
1,1-Dichloroethene	0.5	75	75	125
cis-1,2-Dichloroethene	0.5	95	75	125
trans-1,2-Dichloroethene	0.5	79	75	125
1,2-Dichloropropane	0.5	99	75	125
1,3-Dichloropropane	0.5	108	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit

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QA/QC DATA (Cont'd...)

CLIENT NAME: Law / Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

AETL JOB NO.: 10149

EPA Method 524.2 (L/C) QA/QC DATA (Cont...)

QC		LCS	LCS LCL	LCS UCL
Date Extracted		09-30-98	NA	NA
Date Analyzed		09-30-98	NA	NA
Matrix		Aqueous	Aqueous	Aqueous
Units		%	%	%
Analyte	**DL**	**Results**	**Results**	**Results**
2,2-Dichloropropane	0.5	104	75	125
1,1-Dichloropropene	0.5	79	75	125
cis-1,3-Dichloropropene	0.5	93	75	125
trans-1,3-Dichloropropene	0.5	93	75	125
Ethylbenzene	0.5	108	75	125
Freon 113	1	99	75	125
Hexachlorobutadiene	0.5	121	75	125
Isopropylbenzene	0.5	117	75	125
p-Isopropyltoluene	0.5	113	75	125
Methylene Chloride	1	168	75	125
Napathalene	1	96	75	125
n-Propylbenzene	0.5	112	75	125
Styrene	0.5	112	75	125
1,1,1,2-Tetrachloroethane	0.5	112	75	125
1,1,2,2-Tetrachloroethane	1	103	75	125
Tetrachloroethene	0.5	95	75	125
Toluene	0.5	100	75	125
1,2,3-Trichlorobenzene	1	105	75	125
1,2,4-Trichlorobenzene	1	106	75	125
1,1,1-Trichloroethane	0.5	101	75	125
1,1,2-Trichloroethane	0.5	105	75	125
Trichloroethene	0.5	95	75	125
Trichlorofluoromethane	1	81	75	125
1,2,3-Trichloropropane	1	98	75	125
1,2,4-Trimethylbenzene	0.5	109	75	125
1,3,5-Trimethylbenzene	0.5	111	75	125
Vinyl Chloride	0.5	61	75	125
o-Xylene	0.5	108	75	125
m & p Xylenes	1	106	75	125

LCS = Laboratory Control Sample
LCL = Lower Control Limit
UCL = Upper Control Limit
NS = Not Spiked
NA = Not Applicable

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: 410.4
Chemical Oxygen Demand
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/28/98	09/28/98	09/28/98	**Detection**
Date Analyzed:	09/28/98	09/28/98	09/28/98	**Limit**
COD	ND	ND	ND	6

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
COD	100	100	<1

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ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: (524.2)
Volatile Organic Compounds by GC/MS
Units: ug/L

Lab ID:	AE52009	AE52010	AE52011	AE52012	
Sample No:	4928A	4928B	TRIP BLANK	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/30/98	09/30/98	09/30/98	09/30/98	**Detection**
Date Analyzed:	09/30/98	09/30/98	09/30/98	09/30/98	**Limit**
Benzene	ND	ND	ND	ND	0.5
Bromobenzene	ND	ND	ND	ND	0.5
Bromochloromethane	ND	ND	ND	ND	0.5
Bromodichloromethane	ND	ND	ND	ND	0.5
Bromoform	ND	ND	ND	ND	0.5
Bromomethane	ND	ND	ND	ND	0.5
N- Butylbenzene	ND	ND	ND	ND	0.5
SEC- Butylbenzene	ND	ND	ND	ND	0.5
TERT- Butylbenzene	ND	ND	ND	ND	0.5
Carbon Tetrachloride	ND	ND	ND	ND	0.5
Chlorobenzene	ND	ND	ND	ND	0.5
Chloroethane	ND	ND	ND	ND	0.5
Chloroform	ND	ND	ND	ND	0.5
Chloromethane	ND	ND	ND	ND	0.5
2- Chlorotoluene	ND	ND	ND	ND	0.5
4- Chlorotoluene	ND	ND	ND	ND	0.5
1,2- Dibromo-3-Chloropropane	ND	ND	ND	ND	1
Dibromochloromethane	ND	ND	ND	ND	0.5
1,2- Dibromoethane	ND	ND	ND	ND	0.5
Dibromomethane	ND	ND	ND	ND	1
1,2- Dichlorobenzene	ND	ND	ND	ND	0.5
1,3- Dichlorobenzene	ND	ND	ND	ND	0.5
1,4- Dichlorobenzene	ND	ND	ND	ND	0.5
Dichlorodifluoromethane	13.6	3.8	ND	ND	0.5
1,1- Dichloroethane	5.9	1.4	ND	ND	0.5
1,2- Dichloroethane	0.6	ND	ND	ND	0.5
1,1- Dichloroethene	ND	ND	ND	ND	0.5
CIS-1,2- Dichloroethene	0.5	ND	ND	ND	0.5
TRN-1,2- Dichloroethene	ND	ND	ND	ND	0.5
1,2- Dichloropropane	ND	ND	ND	ND	0.5
1,3- Dichloropropane	ND	ND	ND	ND	0.5
2,2- Dichloropropane	ND	ND	ND	ND	0.5
1,1- Dichloropropene	ND	ND	ND	ND	0.5
CIS-1,3- Dichloropropene	ND	ND	ND	ND	0.5
TRN-1,3- Dichloropropene	ND	ND	ND	ND	0.5
Ethylbenzene	ND	ND	ND	ND	0.5
Freon 113	ND	ND	ND	ND	1
Hexachlorobutadiene	ND	ND	ND	ND	0.5
Isopropylbenzene	ND	ND	ND	ND	0.5
P- Isopropyltoluene	ND	ND	ND	ND	0.5
Methylene Chloride	ND	ND	ND	ND	1
Naphthalene	ND	ND	ND	ND	1

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Units: ug/L

Lab ID: / **Sample No:**	AE52009 4928A	AE52010 4928B	AE52011 TRIP BLANK	AE52012 METHOD BLANK	**Detection Limit**
N- Propylbenzene	ND	ND	ND	ND	0.5
Styrene	ND	ND	ND	ND	0.5
1,1,1,2- Tetrachloroethane	ND	ND	ND	ND	0.5
1,1,2,2- Tetrachloroethane	ND	ND	ND	ND	1
Tetrachloroethene	15.1	1.6	ND	ND	0.5
Toluene	ND	ND	ND	ND	0.5
1,2,3- Trichlorobenzene	ND	ND	ND	ND	1
1,2,4- Trichlorobenzene	ND	ND	ND	ND	1
1,1,1- Trichloroethane	ND	ND	ND	ND	0.5
1,1,2- Trichloroethane	ND	ND	ND	ND	0.5
Trichloroethene	1.5	ND	ND	ND	0.5
Trichlorofluoromethane	ND	ND	ND	ND	1
1,2,3- Trichloropropane	ND	ND	ND	ND	1
1,2,4- Trimethylbenzene	ND	ND	ND	ND	0.5
1,3,5- Trimethylbenzene	ND	ND	ND	ND	0.5
Vinyl Chloride	ND	ND	ND	ND	0.5
O- Xylene	ND	ND	ND	ND	0.5
M,P- Xylenes	ND	ND	ND	ND	1

QUALITY CONTROL SUMMARY

Lab ID:	AE52009	AE52010	AE52011	AE52012
Surrogate Percent Recovery				
Bromofluorobenzene	79	77	73	83
1,2- Dichlorobenzene-d4	95	96	93	109

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Benzene	89	82	8
Chlorobenzene	109	98	10
1,1- Dichloroethene	75	71	5
Toluene	100	90	10
Trichloroethene	95	85	10

ND - Not Detected at The Detection Limit

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840

ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: GEN.-MINERALS.
General Minerals (LC List)
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/21/98	09/21/98	09/21/98	**Detection**
Date Analyzed:	09/29/98	09/29/98	09/29/98	**Limit**
Alkalinity by Titration				
Bicarbonate (as CaCO3)	358	438	ND	2
Carbonate (as CaCO3)	ND	ND	ND	2
Hydroxide (as CaCO3)	ND	ND	ND	2
Total Alkalinity (as CaCO3)	358	438	ND	2
Calculation				
Anions Total (meq/L)	8.40	9.58	ND	0.01
Cations Total (meq/L)	8.36	10.00	ND	0.01
Ion Balance, (Percent)	0.23	2.14	ND	0.01
General				
Chloride (Cl), total	29	39	ND	1
Conductivity (umhos/cm @ 77F	816	1020	ND	10
Fluoride (F), total	0.4	0.3	ND	0.2
Hardness (Ca,Mg) as CaCO3	520	330	ND	2
Nitrate (as N), total	5.0	1.4	ND	0.1
Nitrite (as N), total	ND	0.06	ND	0.02
PH (pH units)	7.04	7.09	ND	1.00
Sulfate (SO4)	64	57	ND	10
Surfactants (MBAS)	ND	ND	ND	0.05
Total Dissolved Solids	528	618	ND	10
Metals				
Aluminum (Al)	ND	2.7	ND	0.1
Calcium (Ca)	96.6	71.5	ND	0.5
Copper (Cu)	ND	ND	ND	0.02
Iron (Fe)	0.95	44.5	ND	0.05
Magnesium (Mg)	24.6	21.9	ND	0.5
Manganese (Mn)	0.01	0.23	ND	0.01
Potassium (K)	5.0	7.2	ND	1.0
Sodium (Na)	31.2	101	ND	0.5
Zinc (Zn)	0.18	4.96	ND	0.03

(Continued)

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

QUALITY CONTROL SUMMARY

Lab ID:	AE52009	AE52010	AE52012
	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Alkalinity by Titration			
Bicarbonate (as CaCO3)	100	100	<1
Carbonate (as CaCO3)	100	100	<1
Hydroxide (as CaCO3)	100	100	<1
Total Alkalinity (as CaCO3)	100	100	<1
General			
Chloride (Cl), total	100	100	<1
Fluoride (F), total	100	100	<1
Hardness (Ca,Mg) as CaCO3	100	100	<1
Nitrate (as N), total	104	104	<1
Nitrite (as N), total	93	93	<1
Sulfate (SO4)	101	101	<1
Surfactants (MBAS)	96	96	<1
Metals			
Aluminum (Al)	106	107	<1
Calcium (Ca)	106	107	<1
Copper (Cu)	101	101	<1
Iron (Fe)	108	108	<1
Magnesium (Mg)	106	106	<1
Manganese (Mn)	101	102	1
Potassium (K)	98	97	1
Sodium (Na)	105	105	<1
Zinc (Zn)	104	104	<1

ND - Not Detected at The Detection Limit

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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: SM-4500-B
Total Boron by Curcumin Method
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/29/98	09/29/98	09/29/98	**Detection**
Date Analyzed:	09/29/98	09/29/98	09/29/98	**Limit**
Boron (B)	**0.4**	**0.3**	ND	0.2

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Boron (B)	101	102	1

ND - Not Detected at The Detection Limit

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American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

AETL Job No: 10689
Project ID: 70111-7-0346
Project Name: Strathern

Report To: (L/C)
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040-1554

Site:
Sun Valley

Attn: Darren Ness

Phone: 323/889-5300

Matrix: Water
Method: \6010\
4 Metals (Cadmium,Chromium,Lead,Nickel)
Units: mg/L

Lab ID:	AE52009	AE52010	AE52012	
Sample No:	4928A	4928B	METHOD BLANK	
Date Sampled:	09/21/98	09/21/98	09/21/98	
Date Extracted:	09/22/98	09/22/98	09/22/98	**Detection**
Date Analyzed:	09/24/98	09/24/98	09/24/98	**Limit**
Cadmium (Cd)	ND	ND	ND	0.005
Chromium (Cr)	ND	ND	ND	0.01
Lead (Pb)	ND	ND	ND	0.05
Nickel (Ni)	ND	ND	ND	0.04

QUALITY CONTROL SUMMARY

	Spike %REC.	**Spike DUP. %REC.**	**AVG. RPD**
Cadmium (Cd)	103	103	<1
Chromium (Cr)	103	104	1
Lead (Pb)	102	103	1
Nickel (Ni)	102	103	1

ND - Not Detected at The Detection Limit

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A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

GROUNDWATER MONITORING REPORT
FIRST QUARTER 1997

Strathern Landfill

Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company

Los Angeles, California

Prepared by

Law/Crandall

Los Angeles, California

April 29, 1997

Law/Crandall Project 70111-2-0346

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LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

April 29, 1997

Mr. Mike McAllister
Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **First Quarter 1997**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the first quarter 1997 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area declined an average of about 12 feet between the third quarter of 1996 and the first quarter of 1997. Groundwater quality met California Drinking Water Standards for the parameters measured, except for manganese and total dissolved solids in well 4928B and tetrachloroethylene (PCE) in well 4928A. Waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

200 CITADEL DRIVE • LOS ANGELES, CA 90040-1554
(213) 889-5300 • FAX (213) 721-6700

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the first quarter 1997 groundwater monitoring program. Law/Crandall collected groundwater samples on February 14, 1997 and prepared this report. BCA-Division of V.O.C Analytical Laboratories (BCA) performed the chemical analyses. BCA is certified for such analyses by the State Department of Health Services.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the first quarter 1997 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in February 1997. Groundwater levels in the area declined an average of about 12 feet between August 1996 and February 1997. The water level at 4928A fell 11.60 feet and the water level at 4928B fell 12.66 feet. The Los Angeles County Department of Public Works spread water intermittently at the Hansen and Tujunga spreading grounds from August 1996 through February 1997. They did not spread water at the Branford spreading grounds between August 1996 and February 1997.

Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the historic water level data. We contoured the groundwater levels for February 1997. Figure 2 shows the groundwater contours.

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GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since groundwater gradient was generally to the south during February, we used K in that direction for our flow velocity calculation. The groundwater gradient between the two monitoring wells was 0.001 ft/ft in February. Groundwater flow for February was 0.62 ft/day or 227 ft/year. At this flow velocity it would take about 5 years for groundwater to flow from the north side of the property to the south side.

GROUNDWATER QUALITY

We collected groundwater samples on February 14, 1997 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Lab analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from BCA of groundwater samples collected in the first quarter of 1997. Appendix C also contains the chain-of-custody records

Inorganics

Laboratory analyses indicated that during the first quarter, the groundwater met California Drinking Water Standards for most inorganic constituents. However, in upgradient well 4928B, levels of manganese and total dissolved solids exceeded drinking water limits. Table 2 shows selected first quarter 1997 results compared to Drinking Water Standards.

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Table 2: Site Water Quality vs. California Drinking Water Standards, 1st Quarter 1997

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A Feb. 1997	4928B Feb. 1997
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	500	560
Chloride (Cl)	250	30	29
Sulfate (SO_4)	250	59	51
Nitrate (NO_3)	45	37	8.6
Iron (Fe)	0.3	<0.04	0.063
Manganese (Mn)	0.05	<0.001	0.25
Zinc (Zn)	5	0.35	0.34
Organic (µg/L)			
Trichloroethylene (TCE)	5	1.0	1.1
Tetrachloroethylene (PCE)	5	9.4	4.2
Trichlorofluoromethane	150	0.6	<0.5
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5
1,1-dichloroethane (1,1-DCA)	5	3.2	3.5
cis-1,2-dichloroethene (cis-1,2-DCE)	6	<0.5	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5

* *Source: CCR, Title 22, Division 4, Chapter 15*

TDS levels may be related to changes in groundwater levels. Last year, groundwater levels rose, and TDS levels were above drinking water limits. Water levels have declined in the area since August 1996 (Figure 3). TDS levels in both wells 4928A and 4928B have decreased, although at well 4828B, TDS levels are still slightly above drinking water limits. This pattern is similar to what we observed when water levels fell between 1985 and 1992.

Iron and manganese levels have also decreased. Acid preservative may have been dissolving particulate metals, causing increased dissolved metals detected in the chemical analyses. Since we

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discontinued use of acid preservative in the sample bottles, iron levels have decreased below MCLs in both wells 4928A and 4928B. Manganese levels have also decreased. In downgradient well 4828A, manganese levels were below detection limits. However, in upgradient well 4928B, manganese levels are still above drinking water limits. The higher CO_2 levels at upgradient well 4928B may cause or at least indicate acidification of groundwater. The more acidic groundwater may be dissolving rust particles in the well casing, which may be a source of higher metals concentrations.

Field CO_2 measurements, which have shown relatively high values since testing began in 1985, increased at upgradient well 4928B, and decreased at downgradient well 4928A in the first quarter of 1997. Increased CO_2 is not likely the result of landfill activities because Strathern landfill accepts only inert fill.

Organics

During the first quarter, trace amounts of tetrachloroethylene (PCE). trichloroethylene (TCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1,1-trichloroethane (1,1,1-TCA), dichlorodifluoromethane, and trichlorofluoromethane were detected in both monitoring wells. Levels were below California Drinking Water Standards except PCE in 4928A, which was slightly above the drinking water limit. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have declined due to below-average precipitation and reduced recharge operations at the Hansen, Branford and Tujunga spreading grounds. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Tetrachloroethylene (PCE) is present in both the upgradient and downgradient wells, suggesting that the landfill is not the source of the contamination. Waste disposal activities do not appear to be adversely affecting local

groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL
a division of Law Engineering and Environmental Services, Inc.

Sanford L. Britt
Project Geologist

William J. O'Braitis, C.E.G. 2037
Senior Geologist

Richard W. Shatz, C.H.G. 84
Principal Hydrogeologist

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(2 copies submitted)

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CERTIFICATION AND DECLARATION

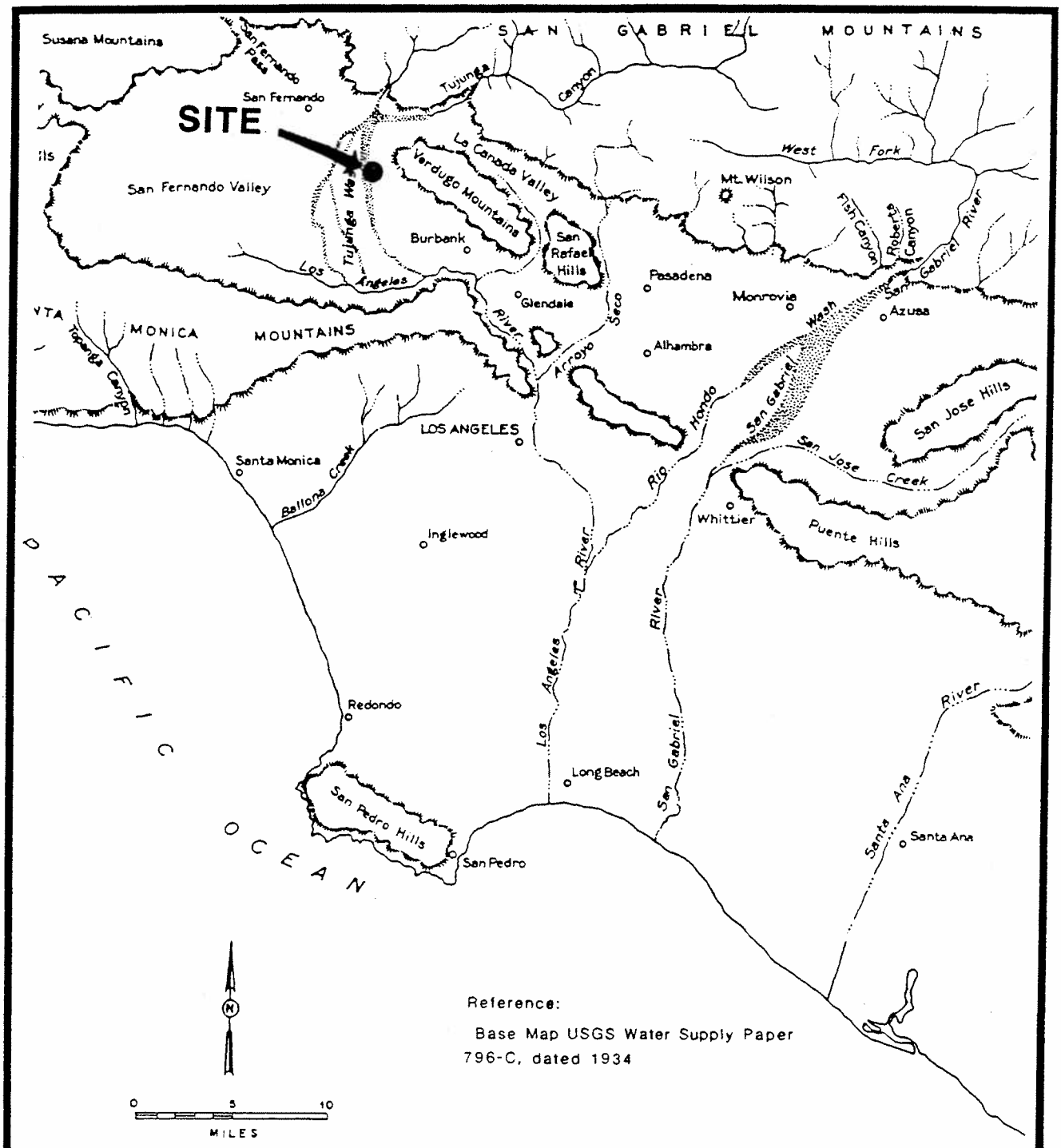
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 28th day of April, 1997, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

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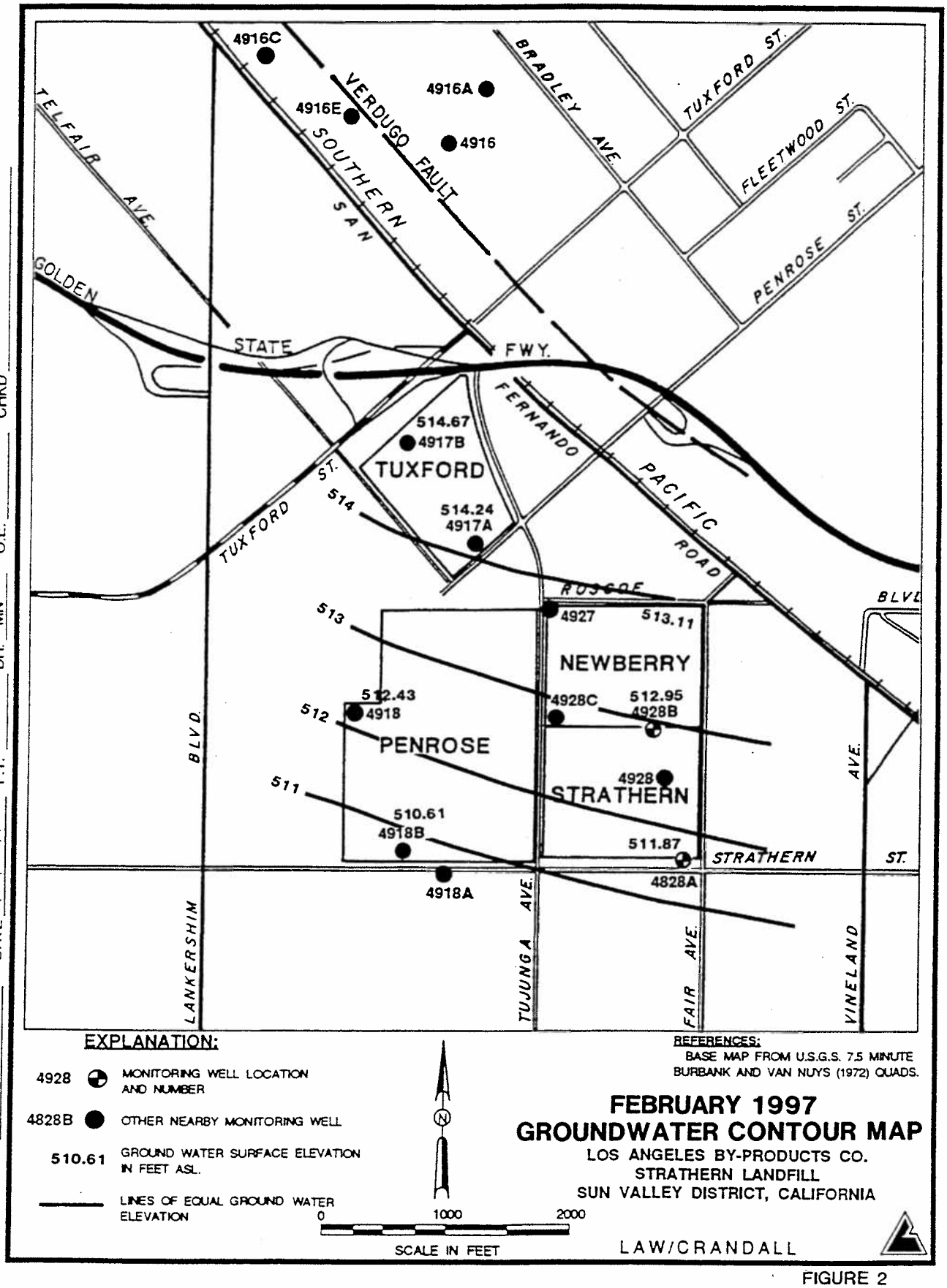

JOB 70111-2-03440.0001 DATE 4-9-97 F.T. DR. MN O.E. CHKD

FIGURE 2

JOB Tell 2.0394 DATE 4/8/97 F.T. ____ DR. ____ O.E. KVF CHKD ____

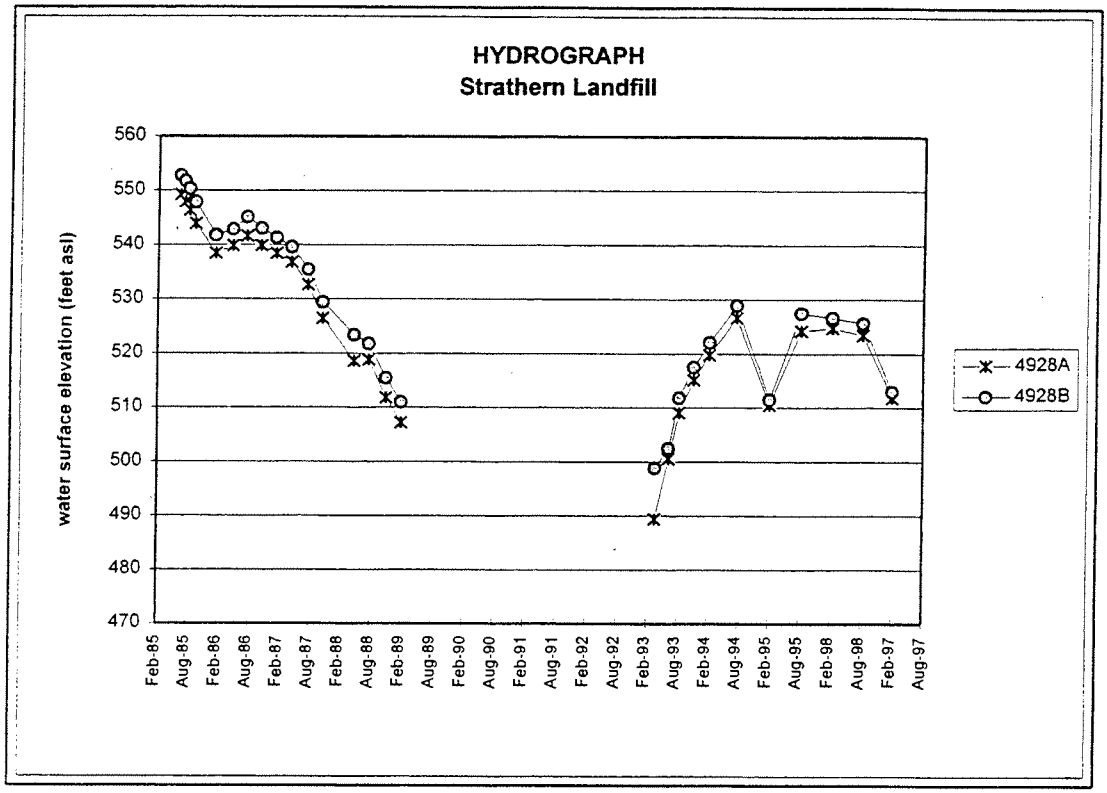

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FIGURE 3

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 4/9/97 F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0348

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	85	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	28	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	820	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	810	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.8	0.0	820	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	480	1300	7.1	170	38	80	8.0	0.0	390	37	260	8.8			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.88	5.8	89	1100	42.5	490	1500	6.8	170	44	85	8.8	<0.8	850	62	130	18.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	58	83	19.0	0.83	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.8	480	61	50	23.0	0.3	0.34	800	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.8	<0.8	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	18.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.8	72	17	29	4.6	<0.8	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	810	7.1	73	18	30	4.8	<0.8	290	48	17	8.2		0.47	340	<8		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.8	290	47	19	7.7		0.64	350	<8		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.28	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	358	820	7.0	91	23	39	5.4	<1	330	46	48	21	0.28	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.8	390	87	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	388	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	580	<6		
4928A	23-Feb-96		524.74	7.0	85	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	860	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96		NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		NM	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.28	0.48	830	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		

NM = Not measured
NS = Not sampled

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JOB 70111-2-0346 DATE 4/9/97 F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0006	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	BCA

NM = Not measured
NS = Not sampled

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CONFIDENTIAL

JOB 70111-2-0346 DATE 4/9/97 F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	800	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	38	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	38	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.8	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	48	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	800			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	810	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	6.9	160	43	46	6.1	<0.8	630	50	44	27	0.31	0.42	780			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7	110	31	36	5.6	0	500	51	29	8.6	<0.2	0.45	560	15		

NM = Not measured
NS = Not sampled

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003799

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JOB 70111-2-0346 DATE 4/9/97 F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0006	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	BCA

NM = Not measured
NS = Not sampled

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the

approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials.

Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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ANALYTICAL REPORT

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LOG NO: G97-02-393
Received: 14 FEB 97
Mailed:

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	320	410
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	320	410
Calcium (6010), mg/L	100	110
Magnesium (6010), mg/L	27	31
Chloride (300.0), mg/L	30	29
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	<0.04	0.063
Manganese (6010), mg/L	<0.01	0.25
pH (150.1), Units	6.9	7.0
Potassium (6010), mg/L	5.6	5.6
Sodium (6010), mg/L	37	36
Sulfate (300.0), mg/L	59	51
Conductivity (120.1), umhos/cm	850	910
Dissolved Solids (160.1), mg/L	500	560
Zinc (6010), mg/L	0.35	0.34
Ion Balance (CALC), Percent	0.61	2.1
Nitrate (300.0), mg/L	37	8.6
Nitrite (300.0), mg/L	<0.2	<0.2
Digestion (3005), Date	02/21/97	02/21/97
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (300.0), mg/L	0.47	0.45
COD (410.4), mg/L	9.4	15
Boron (6010), mg/L	0.21	<0.2

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04
Date Filtered	02/14/97	02/14/97

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
E524.2/VOC (524.2)		
Date Analyzed	02/21/97	02/21/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	0.58	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	3.2	3.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	0.51
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	2.5	6.5
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	1.0	1.1
Trichlorofluoromethane, ug/L	0.60	<0.5
Toluene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Tetrachloroethene, ug/L	9.4	4.2
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.04	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00
4-Bromofluorobenzene Rep., ug/L	5.18	5.04
4-Bromofluorobenzene Theo., ug/L	5.00	5.00

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LOG NO: G97-02-393

Received: 14 FEB 97

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200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-3	Trip Blank	14 FEB 97

PARAMETER	02-393-3
Sample Held, Not Analyzed	HOLD

R. Toghroubi for GG
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
COD (410.4), mg/L	9.4	15
Boron (6010), mg/L	0.21	<0.2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04
Date Filtered	02/14/97	02/14/97

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
E524.2/VOC (524.2)		
Date Analyzed	02/21/97	02/21/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	0.58	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	3.2	3.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	0.51
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	2.5	6.5
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	1.0	1.1
Trichlorofluoromethane, ug/L	0.60	<0.5
Toluene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Tetrachloroethene, ug/L	9.4	4.2
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.04	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00
4-Bromofluorobenzene Rep., ug/L	5.18	5.04
4-Bromofluorobenzene Theo., ug/L	5.00	5.00

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-02-393-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 14 FEB 97

Anions	mg/L	meq/L
Nitrate	37	0.6
Chloride	30	0.85
Sulfate	59	1.2
Bicarbonate (as HCO3)	390	6.4
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		9.1

Cations	mg/L	meq/L
Magnesium	27	2.2
Sodium	37	1.6
Potassium	5.6	0.14
Calcium	100	5
Total Millequivalents per Liter		8.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	320
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	110
Total Hardness	360
Iron	<0.04
Manganese	<0.01
Copper	<0.02
Zinc	0.35
Surfactants, MBAS	<0.1
Dissolved Solids	500
Sp. Conductance, umhos/cm	850
pH, units	6.9
Ion balance in percent	0.61

* Conforms to Title 22, California Administrative Code

BCA — Division of V.O.C. Analytical Laboratories, Inc.
801 Western Avenue, Glendale, CA 91201 • **Phone:** (818) 247-5737 • **Fax:** (818) 247-9797

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-02-393-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 14 FEB 97

Anions	mg/L	meq/L
Nitrate	8.6	0.14
Chloride	29	0.82
Sulfate	51	1.1
Bicarbonate (as HCO3)	500	8.2
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		10.3

Cations	mg/L	meq/L
Magnesium	31	2.6
Sodium	36	1.6
Potassium	5.6	0.14
Calcium	110	5.5
Total Millequivalents per Liter		9.8

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	410
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	130
Total Hardness	400
Iron	0.063
Manganese	0.25
Copper	<0.02
Zinc	0.34
Surfactants, MBAS	<0.1
Dissolved Solids	560
Sp. Conductance, umhos/cm	910
pH, units	7.0
Ion balance in percent	2.08

* Conforms to Title 22, California Administrative Code

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BCA — Division of V.O.C. Analytical Laboratories, Inc.
801 Western Avenue, Glendale, CA 91201 • **Phone:** (818) 247-5737 • **Fax:** (818) 247-9797

CHAIN OF CUSTODY RECORD

VOC Log Number 0951-0253

Client name	Project or PO#	Analyses required
LAW/CRANDALL	70111-2-0346	
Address: 200 Citadel Dr.	Phone #: 213-889-5300	
City, State, Zip: Los Angeles CA 90040	Report attention: Sandy Beitt	

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: KVF / Sample description	Number of containers	Gen Min	COD	Boron	Cd, Cr, Ni, Pb 524.2				Hazardous sample Special handling required	Remarks
	2/14/97	10:00	GW	4928A	8	✓	✓	✓	✓	✓				
	2/14/97	12:00	GW	4928B	8	✓	✓	✓	✓	✓				
	2/14/97			Trip blank	2									hold
														→ metals needs to be filtered and preserved.

	Signature	Print Name	Company	Date	Time
Relinquished by	Kathy Foley Law/Crandall	Kathy Foley	Law/Crandall	2/14/97	2:20
Received by	Sharon Malone	S Malone	VOC	2-14-97	1430
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

VOC ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113
- ☐ 4411 S. 40th Street, Phoenix, AZ 85040 (602) 470-9707

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

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LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

GROUNDWATER MONITORING REPORT
THIRD QUARTER 1997

Strathern Landfill

Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company

Los Angeles, California

Prepared by

Law/Crandall

Los Angeles, California

October 30, 1997

Law/Crandall Project 70111-2-0346

003819

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LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

October 30, 1997

Mr. Mike McAllister
Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **Third Quarter 1997**
Groundwater Monitoring Report
Strathern Landfill, Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the third quarter 1997 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Groundwater levels in the area declined an average of about 7.2 feet between the first and third quarters of 1997. Groundwater quality met California Drinking Water Standards for the parameters measured, except for manganese and total dissolved solids (TDS) in well 4928B and TDS, nitrate and tetrachloroethylene (PCE) in well 4928A. However, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) No. 7055.

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Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP No. 7055, adopted by the Los Angeles RWQCB on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains a summary of the third quarter 1997 groundwater monitoring results. Law/Crandall collected groundwater samples on August 26, 1997 and prepared this report. V.O.C. Analytical Laboratories (VOC) performed the chemical analyses. VOC is certified for such analyses by the State Department of Health Services.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the third quarter 1997 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in August 1997. The water level at 4928A fell 6.9 feet and the water level at 4928B fell 7.8 feet since February 1997. Overall, groundwater levels in the area declined an average of about 7.2 feet between February and August 1997, although Los Angeles County Department of Public Works spread about 916 acre-feet of water at the Hansen, Branford and Tujunga spreading grounds from July through September 1997.

Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the historic water level data. We contoured the groundwater levels for August 1997. Figure 2 shows the groundwater contours.

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GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated non-directional hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. We estimate K to be 600 ft/day in the north-south direction and 150 ft/day in the east-west direction. Since the groundwater gradient was generally to the south during August, we used K in that direction for our flow velocity calculation. The groundwater gradient at the site was 0.0013 ft/ft in August. Groundwater flow for August was 0.753 ft/day or 275 ft/year. At this flow velocity it would take about 4 years for groundwater to flow from the north side of the property to the south side.

GROUNDWATER QUALITY

We collected groundwater samples on August 26, 1997 and measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Laboratory analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix B contains the groundwater sampling protocol. Appendix C contains analytical results from VOC of groundwater samples collected in the third quarter of 1997. Appendix C also contains the chain-of-custody records

Inorganics

Laboratory analyses indicated that during the third quarter, the groundwater met California Drinking Water Standards for most inorganic constituents. However, in upgradient well 4928B, levels of manganese and total dissolved solids (TDS) exceeded drinking water limits. In downgradient well 4928A, levels of TDS and nitrate exceeded drinking water limits. Table 2 shows selected third quarter 1997 results compared to California Drinking Water Standards.

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Table 2: Site Water Quality vs. California Drinking Water Standards, 3rd Quarter 1997

Constituent	Recommended Maximum Contaminant Level*	Water Source	
		4928A Aug. 1997	4928B Aug. 1997
Inorganic (mg/L)			
Total Dissolved Solids (TDS)	500	590	660
Chloride (Cl)	250	38	38
Sulfate (SO_4)	250	69	48
Nitrate (NO_3)	45	50	6.0
Iron (Fe)	0.3	0.13	0.27
Manganese (Mn)	0.05	<0.01	0.26
Zinc (Zn)	5	0.30	0.46
Organic (µg/L)			
Trichloroethylene (TCE)	5	0.69	0.78
Tetrachloroethylene (PCE)	5	7.8	2.5
Trichlorofluoromethane	150	<1	<1
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	0.63
1,1-dichloroethane (1,1-DCA)	5	2.1	2.3
cis-1,2-dichloroethene (cis-1,2-DCE)	6	<0.5	<0.5
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.5

** Source: CCR, Title 22, Division 4, Chapter 15*

TDS levels may be related to changes in groundwater levels. In 1996, groundwater levels rose, and TDS levels were above drinking water limits. Water levels have declined in the area since August 1996 (Figure 3). TDS levels in both wells 4928A and 4928B have since 1996, but are still above drinking water limits. This pattern is similar to what we observed when water levels fell and TDS levels decreased between 1985 and 1992.

Iron and manganese levels have also decreased. Acid preservative may have been dissolving particulate metals, causing increased dissolved metals detected in the chemical analyses. Since we

discontinued use of acid preservative in the sample bottles, analyzing for dissolved metals rather than total metals, iron levels have decreased below MCLs in both wells 4928A and 4928B. Manganese levels have also decreased. In downgradient well 4828A, manganese levels were below detection limits. However, in upgradient well 4928B, manganese levels are still above drinking water limits. The higher CO_2 levels at upgradient well 4928B may cause or at least indicate acidification of groundwater. The acidic groundwater may be dissolving rust particles in the well casing, which may be a source of higher metals concentrations.

Field CO_2 measurements, which have shown relatively high values since testing began in 1985, increased at upgradient well 4928B, and decreased at downgradient well 4928A in the third quarter of 1997. It is our opinion that increased CO_2 is probably not the result of landfill activities because it occurs only in the upgradient well and Strathern landfill accepts only inert fill.

Organics

During the third quarter, trace amounts of tetrachloroethylene (PCE), trichloroethylene (TCE) 1,1-dichloroethane (1,1-DCA), and dichlorodifluoromethane were detected in upgradient well 4928B. Downgradient well 4928A contained trace amounts of PCE and TCE. Levels were below California Drinking Water Standards except PCE in 4928A, which was slightly above the drinking water limit. No definite pattern has emerged from the organics data, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have declined due to below-average precipitation and reduced recharge operations at the Hansen, Branford and Tujunga spreading grounds. There does not appear to be an association between landfill operations and changes in groundwater character. Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Tetrachloroethylene (PCE) is present in both the upgradient and downgradient wells, suggesting that the landfill is not the source of the contamination. Waste disposal activities do not appear to be adversely affecting local

groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL

Sanford L. Britt, R.G. 6655
Project Geologist

William J. O'Braitis, C.E.G. 2037
Senior Geologist

for: Richard W. Shatz, C.H.G. 84
Principal Hydrogeologist

i:\70111\97_proj\20346\0346q197.doc/KVF
(2 copies submitted)

003826

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 3RD day of NOVEMBER, 1997, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

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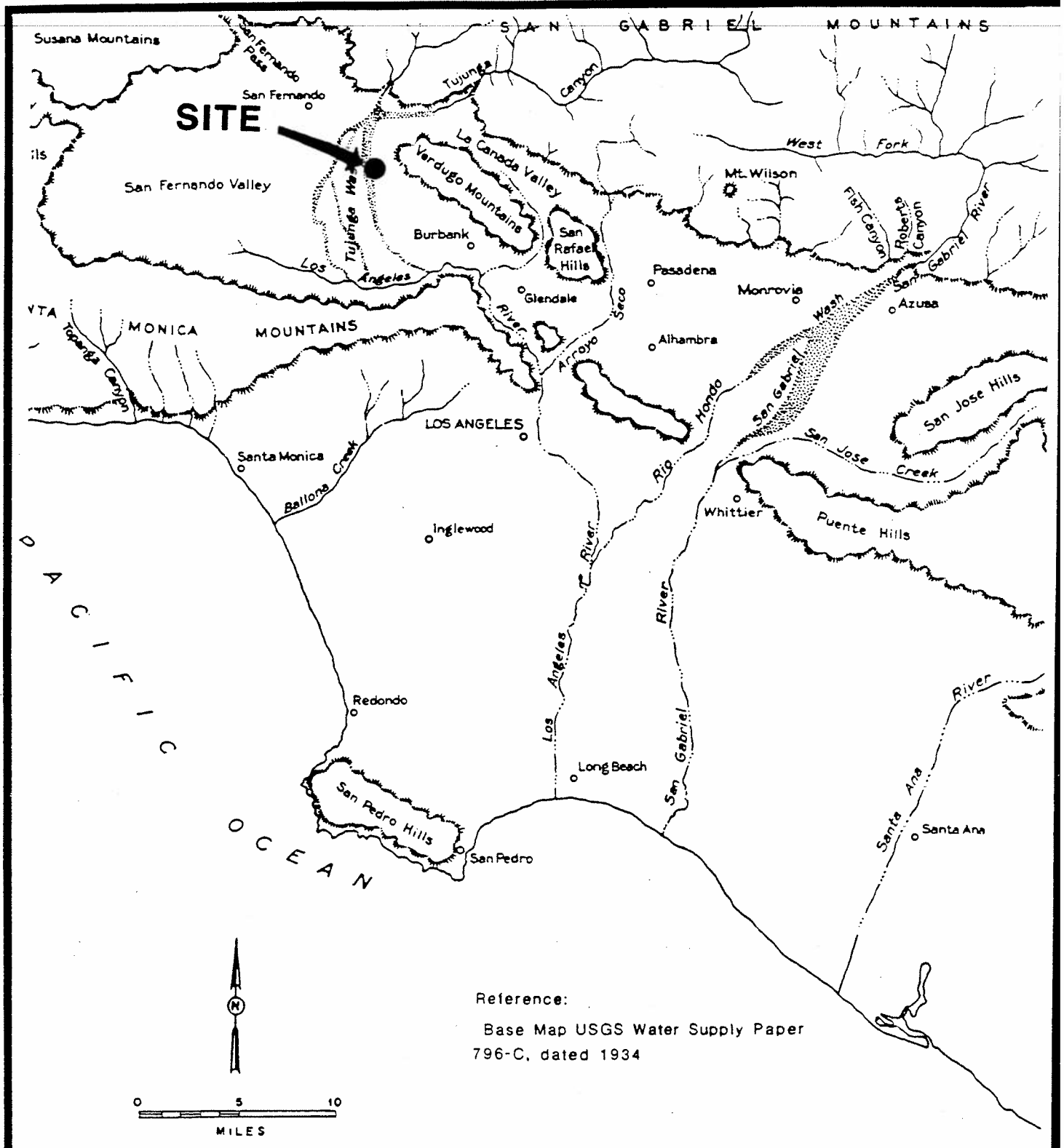

Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

003829

FORM 120 JOB 2.2 6.0 DATE 31-... DR G. M. C. O.E. WJO CHKD.

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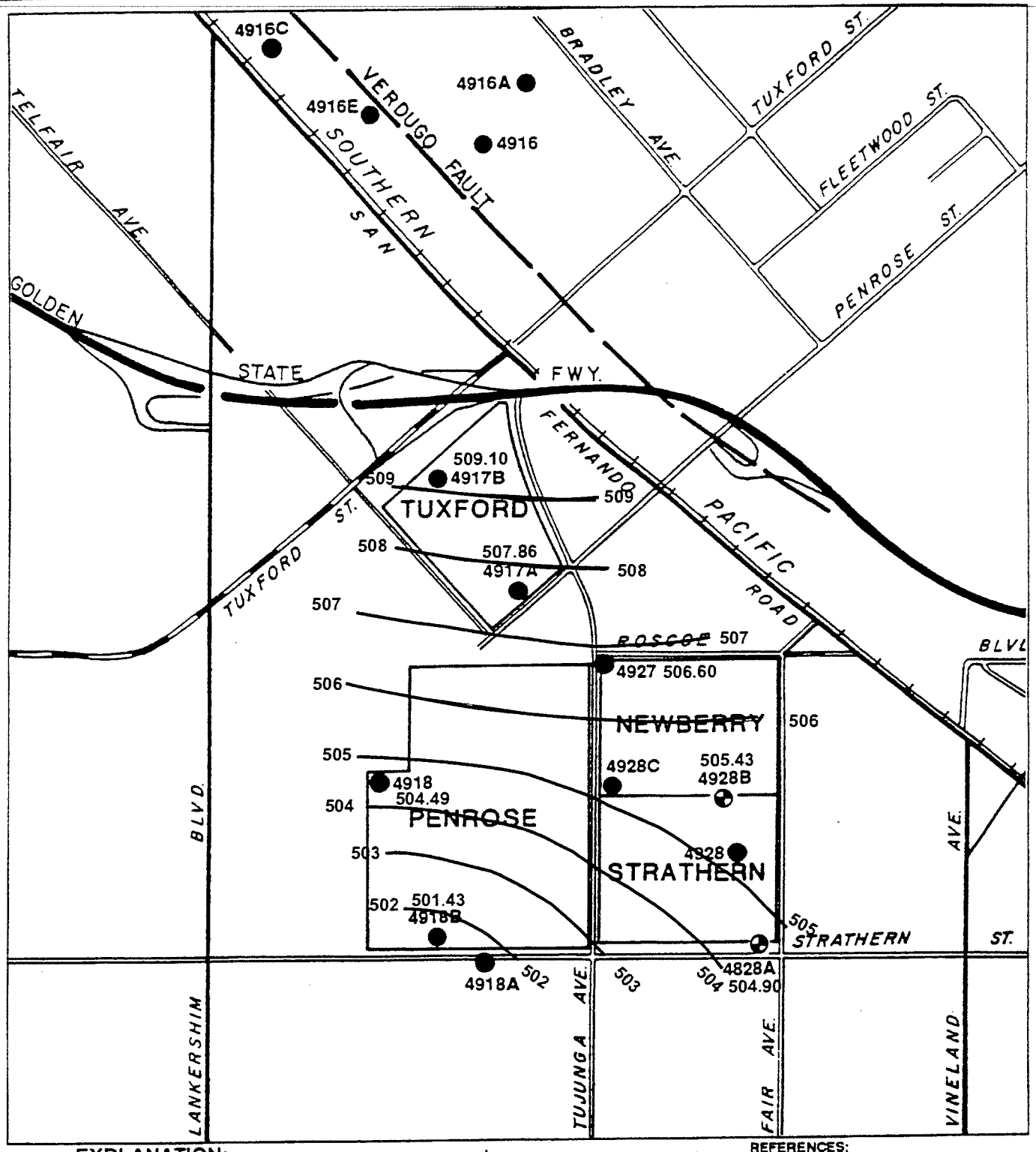


EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 504.90 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000
SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST 1997
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

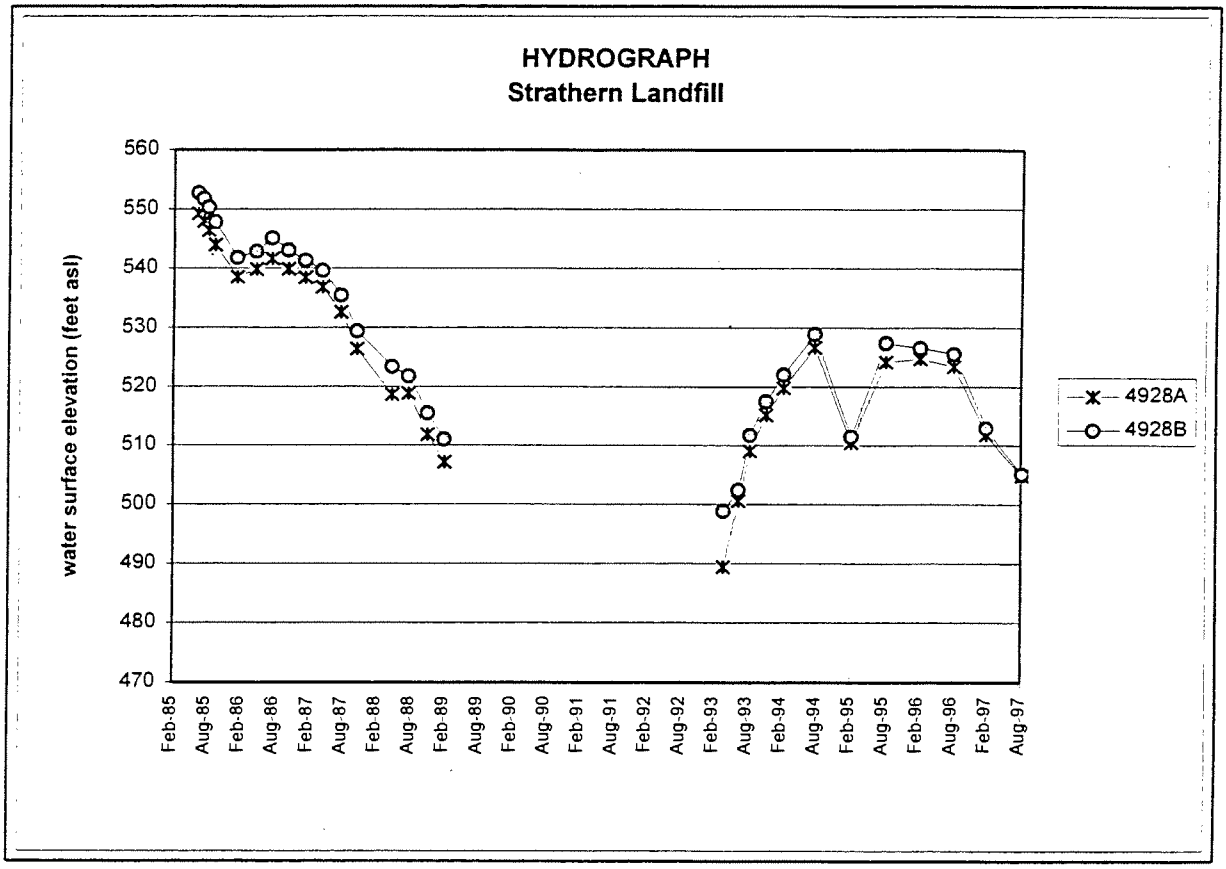
LAW/CRANDALL

FIGURE 2

JOB 70111-2-0346.0001 DATE 10/24/97 F.I. DR. NH CHKD. KVF

003830

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. _____ CHKD _____



LAW/CRANDALL

FIGURE 3

APPENDIX A

GROUNDWATER DATABASE

70111-2-0346 10/30/97

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES								GENERAL MINERAL(ppm)							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										--	--	--	--	--	--	250	250	45	0.5	0.8-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	850			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	18.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	8.0	0.0	870	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.8	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.8	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	68	340	75.0	460	1400	7.0	160	38	82	7.8	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		538.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	8.8	<0.6	650	82	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	830	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	8.9	68	780	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.83	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	8.4	<0.8	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.8	<0.6	442	51	38	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.8	<0.6	370	58	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.8	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	68	440	25	252	810	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.8	<0.8	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	86	500	22	248	800	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	48	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<8		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<8		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		516.47	7.4	65	995	130	348	980	7.1	120	30	47	6.4	<10	360	73	45	55	0.28	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	8.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

00383

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70111-2-0346 10/30/97

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.08	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.480	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-98	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.7	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC

NM = Not measured
NS = Not sampled

LAW/CRANDALL

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70111-2-0346 10/30/97

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. KVK CHKD _____

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES											GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	8.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	8.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.48	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.8	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<8		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	6.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-98		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	1100	6.9	160	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			
4928B	14-Feb-97		512.95	7.6	69	930	79	540	910	7	110	31	36	5.8	0	500	51	29	8.6	<0.2	0.45	560	15		
4928B	26-Aug-97		505.13	7.1	71.5	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0.21	0.25	660	34		

NM = Not measured
NS = Not sampled

LAW/CRANDALL

003835

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70111-2-0346 10/30/97

JOB _____ DATE _____ F.T. _____ DR. _____ O.E. KVF CHKD _____

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC

NM = Not measured
NS = Not sampled

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APPENDIX B

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

WATER LEVEL MEASUREMENTS

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

- Monitoring well number;
- Date and time of measurement;
- Name of person making the measurement; and
- Any pertinent remarks related to conditions that affect the measured level.

EQUIPMENT CLEANING

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

SAMPLE CONTAINERS

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the

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approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

FILLING SAMPLE CONTAINERS

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

SAMPLE PRESERVATION

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials.

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Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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ANALYTICAL REPORT

Our Quality Control Is Your Quality Assurance

LOG NO: G97-08-507
Received: 26 AUG 97
Mailed:

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	330	490
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	330	490
Calcium (6010), mg/L	110	150
Magnesium (6010), mg/L	27	41
Chloride (300.0), mg/L	38	38
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.13	0.27
Manganese (6010), mg/L	<0.01	0.26
pH (150.1), Units	6.6	6.6
Potassium (6010), mg/L	5.5	6.4
Sodium (6010), mg/L	41	45
Sulfate (300.0), mg/L	69	48
Conductivity (120.1), umhos/cm	890	1000
Dissolved Solids (160.1), mg/L	590	660
Zinc (6010), mg/L	0.30	0.46
Ion Balance (CALC), Percent	1.4	4.2
Nitrate (300.0), mg/L	50	6.0
Nitrite (300.0), mg/L	<0.2	<0.2
Digestion (3005), Date	09/02/97	09/02/97
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (300.0), mg/L	0.25	0.25
COD (410.4), mg/L	<6	34
Boron (6010), mg/L	0.25	0.21

LOG NO: G97-08-507

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Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04

LOG NO: G97-08-507

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
E524.2/VOC (524.2)		
Date Analyzed	09/06/97	09/06/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	2.1	2.3
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<1	<1
1,2,3-Trichloropropane, ug/L	<1	<1
1,2,4-Trichlorobenzene, ug/L	<1	<1
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.63
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

LOG NO: G97-08-507

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<1	<1
Dichlorodifluoromethane, ug/L	<0.5	3.0
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<1	<1
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	0.69	0.78
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<0.5	<0.5

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LOG NO: G97-08-507

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Tetrachloroethene, ug/L	7.8	2.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichloroethane-d4 Rep., ug/L	8.57	10.5
1,2-Dichloroethane-d4 Theo., ug/L	10.0	10.0
4-Bromofluorobenzene Rep., ug/L	9.56	9.19
4-Bromofluorobenzene Theo., ug/L	10.00	10.0
Toluene-d8 Reported, ug/L	9.04	8.95
Toluene-d8 Theo., ug/L	10.0	10.0
Dibromofluoromethane Rep., ug/L	9.07	9.58
Dibromofluoromethane Theo., ug/L	10.0	10.0

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LOG NO: G97-08-507

Received: 26 AUG 97

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200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-3	Trip Blank	26 AUG 97

PARAMETER	08-507-3
Sample Held, Not Analyzed	HOLD

Linda Geddes for GG
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specifi compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar locatio

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LOG NO: G97-08-507

Received: 26 AUG 97

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Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
COD (410.4), mg/L	<6	34
Boron (6010), mg/L	0.25	0.21
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04

LOG NO: G97-08-507

Received: 26 AUG 97

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
E524.2/VOC (524.2)		
Date Analyzed	09/06/97	09/06/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	2.1	2.3
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<1	<1
1,2,3-Trichloropropane, ug/L	<1	<1
1,2,4-Trichlorobenzene, ug/L	<1	<1
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.63
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<1	<1
Dichlorodifluoromethane, ug/L	<0.5	3.0
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<1	<1
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	0.69	0.78
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<0.5	<0.5

LOG NO: G97-08-507

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Tetrachloroethene, ug/L	7.8	2.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichloroethane-d4 Rep., ug/L	8.57	10.5
1,2-Dichloroethane-d4 Theo., ug/L	10.0	10.0
4-Bromofluorobenzene Rep., ug/L	9.56	9.19
4-Bromofluorobenzene Theo., ug/L	10.00	10.0
Toluene-d8 Reported, ug/L	9.04	8.95
Toluene-d8 Theo., ug/L	10.0	10.0
Dibromofluoromethane Rep., ug/L	9.07	9.58
Dibromofluoromethane Theo., ug/L	10.0	10.0

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LOG NO: G97-08-507

Received: 26 AUG 97

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-08-507-1
Sample Description: 4938A

General Mineral Analysis
Sampled Date 26 AUG 97

Anions	mg/L	meq/L
Nitrate	50	0.81
Chloride	38	1.1
Sulfate	69	1.4
Bicarbonate (as HCO3)	400	6.6
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		9.9

Cations	mg/L	meq/L
Magnesium	27	2.2
Sodium	41	1.8
Potassium	5.5	0.14
Calcium	110	5.5
Total Millequivalents per Liter		9.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	0
Carbonate Alk (as CaCO3)	0
Bicarbonate Alk (as CaCO3	330
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	110
Total Hardness	380
Iron	0.13
Manganese	0.001
Copper	0.002
Zinc	0.30
Surfactants, MBAS	0
Dissolved Solids	590
Sp. Conductance, umhos/cm	890
pH, units	6.6
Ion balance in percent	1.38

* Conforms to Title 22, California Administrative Code

LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-08-507-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 26 AUG 97

Anions	mg/L	meq/L
Nitrate	6.0	0.097
Chloride	38	1.1
Sulfate	48	1
Bicarbonate (as HCO3)	600	9.8
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		12.0

Cations	mg/L	meq/L
Magnesium	41	3.4
Sodium	45	2
Potassium	6.4	0.16
Calcium	150	7.5
Total Millequivalents per Liter		13.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	0
Carbonate Alk (as CaCO3)	0
Bicarbonate Alk (as CaCO3	490
Ca Hardness (as CaCO3)	370
Mg Hardness (as CaCO3)	170
Total Hardness	540
Iron	0.27
Manganese	0.26
Copper	0
Zinc	0.46
Surfactants, MBAS	0
Dissolved Solids	660
Sp. Conductance, umhos/cm	1000
pH, units	6.6
Ion balance in percent	4.24

* Conforms to Title 22, California Administrative Code

VOC Analytical Laboratories

1212 E. KATELLA AVE
ANAHEIM, CA 92805

801 WESTERN AVE.
GLENDALE, CA 91201

1085 SHARY CIRCLE
CONCORD, CA 94518

4411 S. BROADWAY Ste. D-1
PHOENIX, AZ 85040

V.O.C. Log # 69708J07

Chain of Custody Record

Quote # _____

Company Name Law/Crandall
Address 200 Citadel Dr.
City Los Angeles State CA Zip 90040
Attn: Sandy Britt Fax # 213-721-6700
Project Name / Number 70111-2-0396 PO#
Sampler Name / Signature KVF Phone # 213-889-5300

#	Sample Label (Client ID)	Collected Date	Collected Time	Matrix Code*	#of Cont	Gen. Min.	Boron	COD	Cd, Cr, Ni, Pb	524.2	Field Filtered (Y/N)	Integrity OK (Y/N)
1	4928A	8/26/97	10:15	GW	8	✓	✓	✓	✓	✓		
2	4928B	8/26/97	11:45	GW	8	✓	✓	✓	✓	✓		
3	Trip blank											
4												
5												
6												
7												
8												
9												
0												

LAB ANALYSIS

Sample
pH
Pres Codes
Parameters

Matrix Codes *

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H_2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water	PE	Petroleum
SU	Surface Water	O	Other _____ (Please Specify)

Pres Codes

A- None	E- HCl
B- HNO_3	F- MeOH
C- H_2SO_4	I- Ice
D- NaOH	O- Other

REMARKS

metals needs to be filtered.
Hold trip blank.

Short Hold Y____ N____
Ice Y____ N____
QA/QC Report Level None____ 1____ 2____ 3____ Other____
COC OK Y N
Initials
T.A.T. Request Standard
RUSH Date required
Custody Seals Y N
Temp Control ____°C
Local Job Y N

Item	Relinquished by	Date	Time	Received by	Date	Time
	Kathy Foley	8/26/97	12:42	Sharon Malone	8/26/97	1242

C.O.C. # 1003692

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LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

1997 ANNUAL REPORT

GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company
Los Angeles, California

Law/Crandall Project 70111-2-0346

February 2, 1998

003855

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LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

February 2, 1998

Mr. Mike McAllister

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **1997 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 1997 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells declined since 1996 and during 1997. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for manganese, nitrates, and total dissolved solids (TDS). Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene which was slightly over drinking water standards. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

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Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual sampling and reporting on groundwater quality. This monitoring report contains an annual summary of the 1997 groundwater monitoring program. Law/Crandall collected groundwater samples in February and August of 1997 and prepared this report. VOC Analytical Laboratories performed the chemical analyses. VOC is certified for such analyses by the State Department of Health Services.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1997 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in February and August of 1997. Groundwater levels fell 7 to 8 feet in the monitoring wells between February and August this year. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for February and August. Appendix B contains these contour maps.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. Since groundwater gradient was to the south during the year, we calculated

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K in that direction. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient across the site was 0.001 ft/ft in February and 0.002 ft/ft in August. Groundwater flow for February was 0.8 ft/day or 300 ft/year. In August, flow was 1.0 ft/day or 350 ft/year. These velocity calculations are corrected from those reported in previous monitoring reports. At these flow velocities it would take 3 to 4 years for groundwater to flow across the site.

GROUNDWATER QUALITY

We measured groundwater levels and collected groundwater samples from wells 4928A and 4928B for the first quarter on February 14, 1997 and for the third quarter on August 26, 1997. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Lab analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from VOC of groundwater samples collected in 1997. VOC analytical laboratories is certified by the California Department of Health Services for the analyses they performed. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 1997, the groundwater met California Drinking Water Standards for most constituents. However, levels of manganese, total dissolved solids (TDS), and nitrate exceeded drinking water limits. Table 2 shows selected 1997 results compared to Drinking Water Standards.

TDS levels may be related to changes in groundwater levels. Increases in TDS levels appear to coincide with higher water levels. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels rose, dissolved solids increased. Water levels have declined since 1996. TDS levels have correspondingly declined but remain above the recommended Maximum Concentration Level (MCL). The correlation between water level and TDS concentration is not perfect, however. Groundwater levels continued to fall during 1997 but TDS rose between the first and third quarters.

Table 2: Site Water Quality vs. California Drinking Water Standards
1997 Cumulative Data

Constituent	Recommended Maximum Concentration Level*	Water Source			
		4928A		4928B	
		Feb.	Aug.	Feb.	Aug.
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	500	590	560	660
Chloride (Cl)	250	30	38	29	38
Sulfate (SO_4)	250	59	69	51	48
Nitrate (NO_3)	45	37	50	8.6	6
Iron (Fe)	0.3	<0.04	0.13	0.063	0.27
Manganese (Mn)	0.05	<0.01	<0.01	0.25	0.26
Zinc (Zn)	5	0.35	0.30	0.34	0.46
Organic (ug/L)					
Trichloroethylene (TCE)	5	1.0	0.69	1.1	0.78
Tetrachloroethylene (PCE)	5	9.4	7.8	4.2	2.5
Trichlorofluoromethane	150	0.60	<1	<0.5	<1
Dichlorodifluoromethane	--	2.5	<0.5	6.5	3.0
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	<0.5	0.63
1,1-dichloroethane (1,1-DCA)	5	3.2	2.1	3.5	2.3
1,1,1-trichloroethane (1,1,1-TCA)	200	0.58	<0.5	<0.5	<0.5

** Source: CCR, Title 22, Division 4, Chapter 15*

Manganese continued to exceed drinking water standards in upgradient well 4928B but levels have decreased. Iron levels are no longer over drinking water standards in either monitoring well. We indicated in previous reports that the rising water levels, in combination with lower groundwater pH and sample bottle acid preservative, increased metals concentration. We discontinued use of acid preservative in the sample bottles and now analyze for dissolved metals rather than total

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metals. The new procedures, in combination with falling groundwater levels appear to have resulted in lower iron and manganese levels.

Nitrate levels in both upgradient and downgradient monitoring wells have fallen since 1996, but remain elevated. Elevated nitrate levels seem to be associated to some degree with high water levels but this does not explain the current levels completely. In August, downgradient well 4928A nitrate levels remained above drinking water standards. Strathern landfill accepts only inert fill. No high nitrogen containing wastes (e.g. sewage wastes) are deposited at the landfill. We suspect another source has elevated nitrated levels in both upgradient and downgradient wells.

Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents. Figure 4 shows a Schoeller plot of inorganic laboratory results from samples collected during August of 1997. The plot shows groundwater at the site is a calcium-bicarbonate water. Sodium and potassium concentrations are slightly elevated which indicates that the groundwater has been "softened" at both upgradient and downgradient wells. The levels of sulfate are relatively lower in upgradient well 4928B. The carbonate/bicarbonate levels are higher than calcium levels in both wells which is reflective of a slightly acidified groundwater body.

Organics

During 1997, trace amounts of trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,2-dichlorobenzene (1,2-DCB), 1,1-dichloroethane (1,1-DCA), and dichlorodifluoromethane were detected in upgradient monitoring well 4928B. Trace amounts of TCE, PCE, 1,1-DCA, 1,1,1-TCA, dichlorodifluoromethane and trichlorofluoromethane were detected in downgradient well 4928A. Levels were below California Drinking Water Standards in downgradient well 4928A except for PCE, which was slightly above the drinking water limit.

No definite pattern has emerged from the volatile organic sampling data. The landfill does not appear to be the source since concentrations of organics observed in samples from upgradient well 4928B in the past have tended to have higher concentrations than in samples from downgradient

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well 4928A. In addition, some of the volatile organics observed in samples from well 4928B have not been observed in samples from downgradient well 4928A. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have fallen since 1996 in response to decreased precipitation during the winter months. There seems to be a correlation between high water levels and higher levels of both total dissolved solids, manganese, and nitrates. Concentrations of these constituents have declined with the water levels. Nitrate levels have fallen in both the upgradient and downgradient wells but remains over drinking water standard levels in downgradient well 4928A. No high nitrogen containing wastes are disposed at the landfill, therefore, we suspect an off-site source of the elevated nitrates. Our revised sampling procedures, in combination with falling groundwater levels appear to have resulted in decreased metals concentrations. Trace concentrations of several organic compounds have appeared intermittently, yet persistently, over time at both upgradient and downgradient monitoring wells. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

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We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,
LAW/CRANDALL,

Sanford L. Britt, R.G. 6655
Project Geologist

William J. O'Braitis, C.E.G. 2037
Senior Geologist

by ___ with permission

Richard W. Shatz, C.H.G. 84
Principal Hydrogeologist

I:\70111\97_PROJ\20346\0346AR97.DOC/SLB
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

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CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 2nd day of Feb, 1998, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

FIGURES

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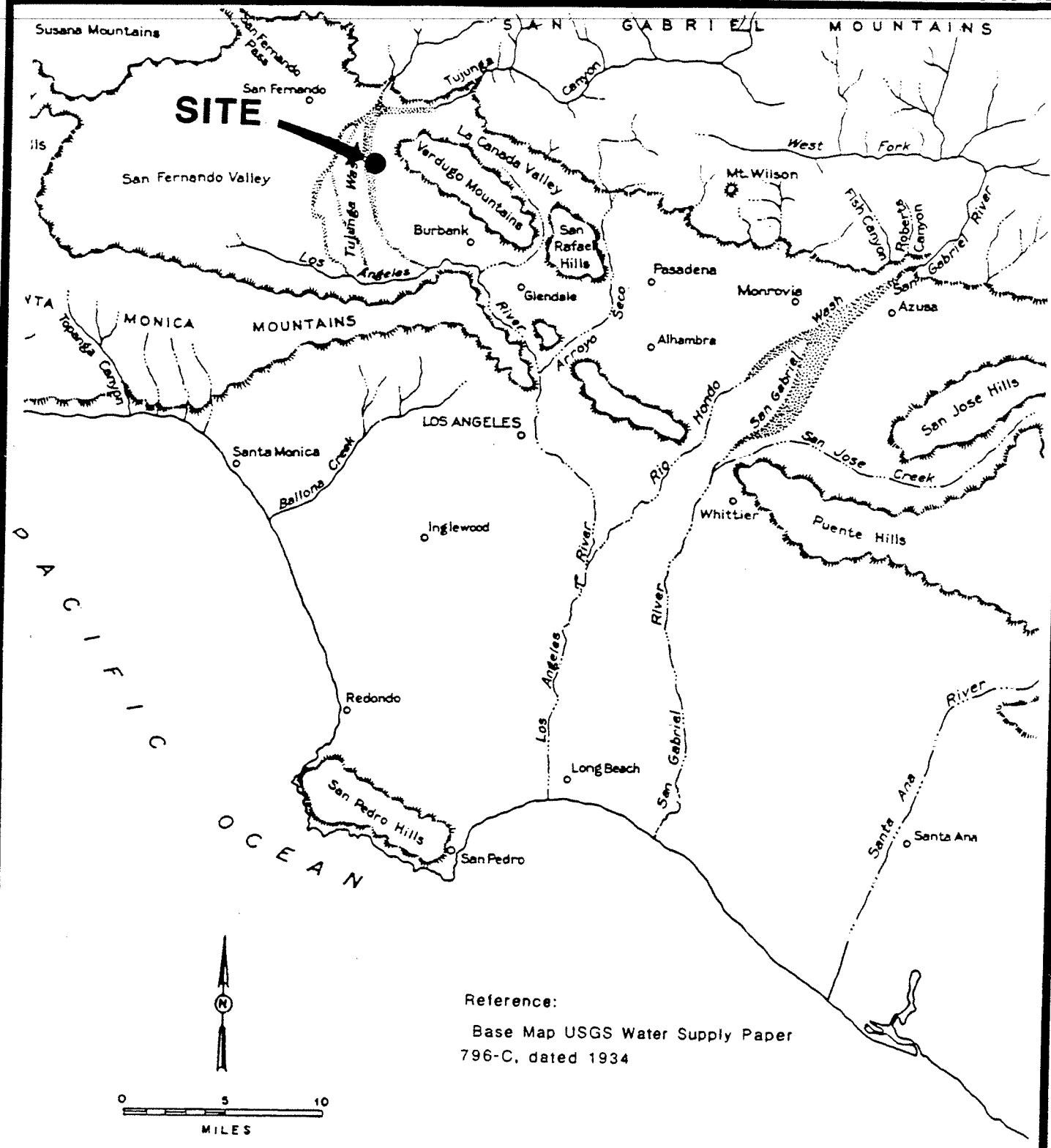

Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

003866 FIGURE 1

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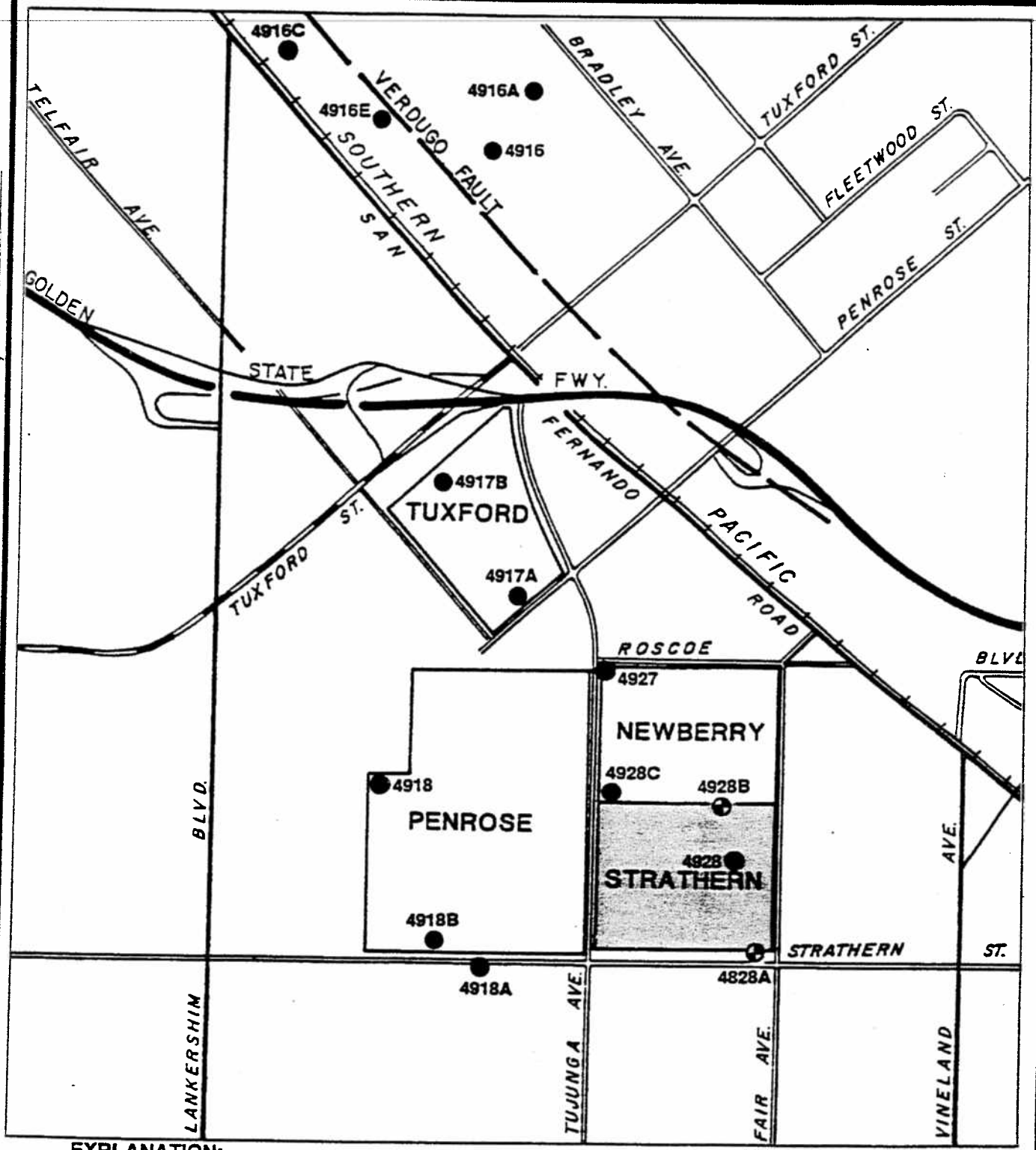

EXPLANATION:

4928 ● MONITORING WELL LOCATION AND NUMBER

4828B ● OTHER NEARBY MONITORING WELL

GROUND WATER SURFACE ELEVATION IN FEET ASL

LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MONITORING WELL LOCATIONS

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

JOB 70111-2-0546 DATE 1-19-96 F.T. ____ DR. MN ____ O.E. SLB CHKD LJ30

FIGURE 2

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JOB 7011-2-0346 DATE 12-30-97 F.T. _____ DR. _____ O.E. SLS CHKD _____

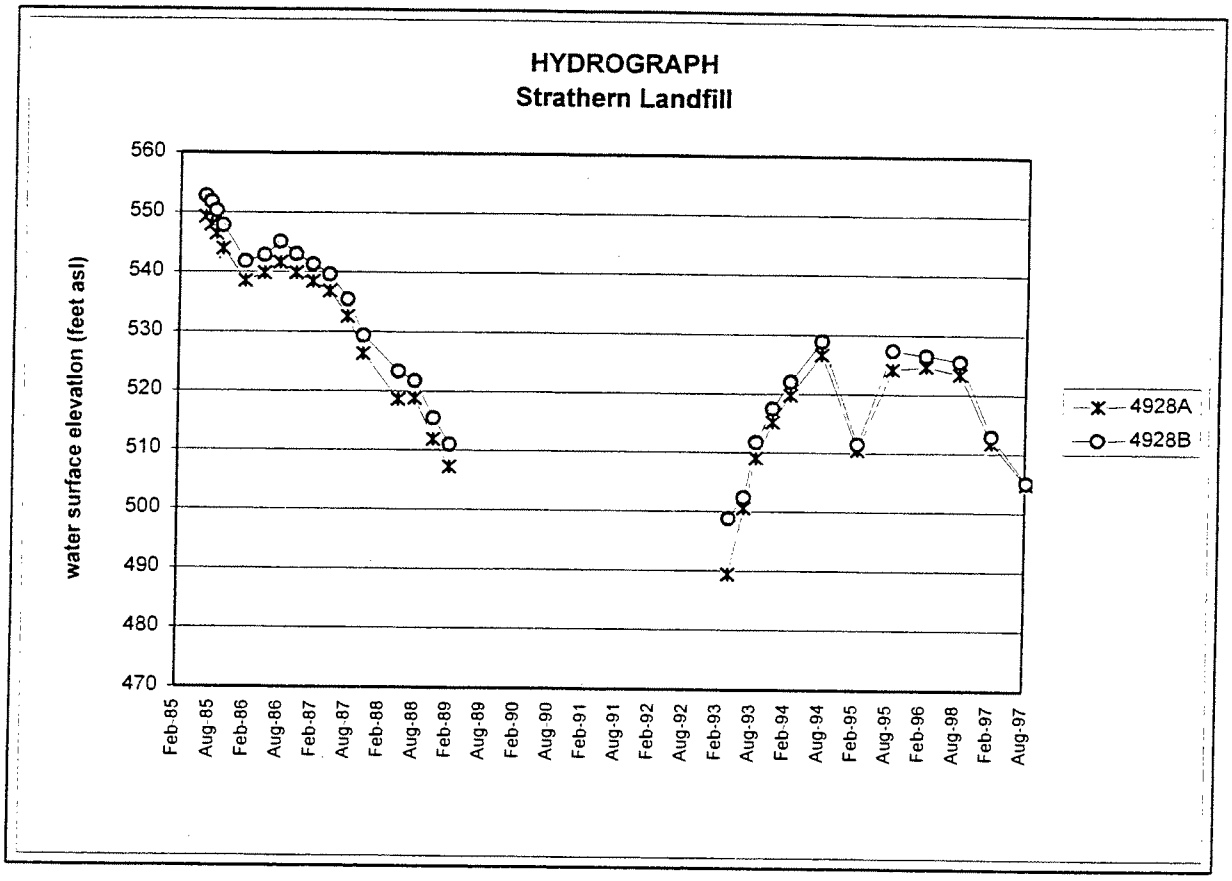

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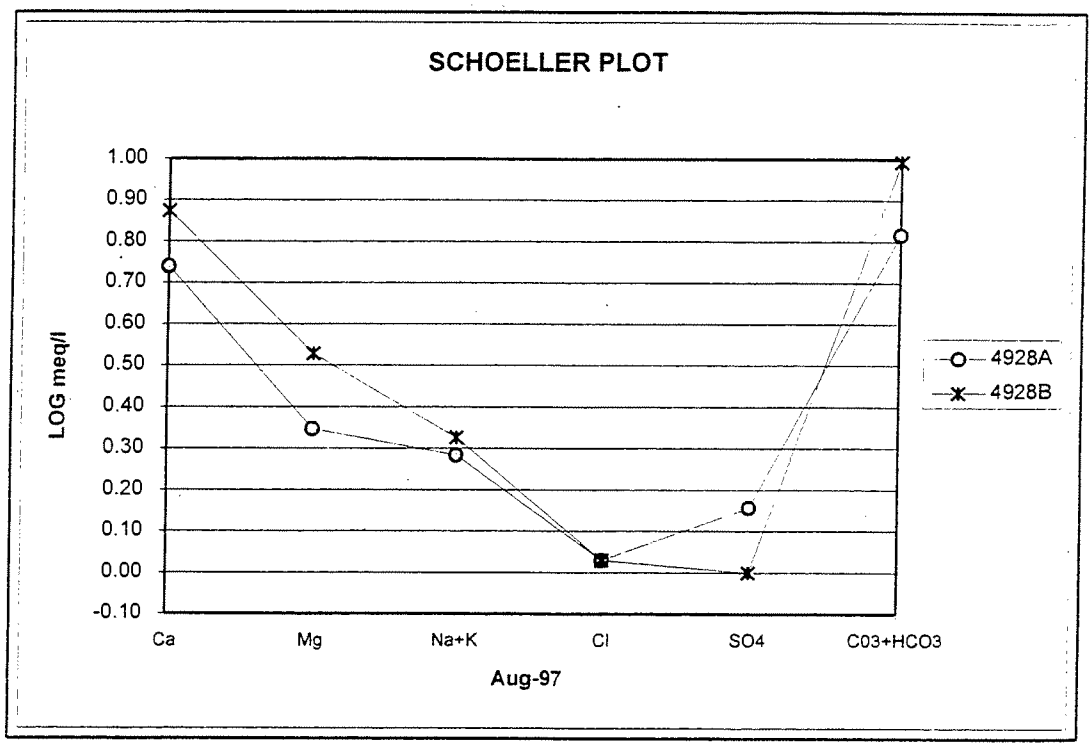
FIGURE 3

JOB 70111-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SCB CHKD _____



LAW/CRANDALL

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 12/30/97 F.T. _____ DR. _____ O.E. SrB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)						LABORATORY ANALYSES								GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
	MCLs										- -	- -	- -	- -	- -	- -	250	250	45	0.5	0.6-1.	500			
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.6	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		516.47	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		
4928A	14-Feb-97		511.81	7.2	65	830	50	420	850	6.9	100	27	37	5.6	0	390	59	30	37	0.21	0.47	500	9.4		
4928A	26-Aug-97		504.90	7.0	67	825	34	372	890	6.6	110	27	41	5.5	0	400	69	38	50	0.25	0.25	590	<6		

NM = Not measured

LAW/CRANDALL

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JOB 70111-2-0346 DATE 12/30/97 FIT. _____ DR. _____ O.E. SRB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	LAB SOURCE
	MCLs	5	5	5	5	5	1.0	0.05	0.05	0.005	0.01	1.3	0.3	0.002	0.05	0.05	0.1	0.01	5	
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	BCA
4928A	14-Feb-97	1.0	9.4	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	<0.04		<0.01	<0.05	<0.04		0.35	VOC
4928A	26-Aug-97	0.69	7.8	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.13		<0.01	<0.05	<0.04		0.30	VOC

NM = Not measured

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JOB 70111-2-0346 DATE 12/30/97 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4 0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0 4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0 24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502 46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3 4		0 38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0 36	400	<6		
4928B	21-Feb-94		522 09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0 25	440			
4928B	05-Aug-94		528 93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0 31	0.27	0 41	600			
4928B	20-Feb-95		511 51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5 5	<0.6	550	32	38	<0.1	<0 05	0 44	580	6 9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7 0	130	36	42	5 9	<10	550	45	26	30	<0 2	0 15	610	<6		
4928B	23-Feb-96		526 60	7 2	75	820	35	546	1400	6.8	190	54	52	6 5	<10	690	78	77	5.7	0 53	1 1	880	32 0		
4928B	23-Aug-96		525 61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7 0	71	1000	NA	595	1100	6.9	160	43	46	6 1	<0 6	630	50	44	27	0 31	0 42	760			
4928B	14-Feb-97		512 95	7 6	69	930	79	540	910	7	110	31	36	5.6	0	500	51	29	8 6	<0 2	0 45	560	15		
4928B	26-Aug-97		505 13	7.1	71.5	1120	88	560	1000	6.6	150	41	45	6.4	0	600	48	38	6	0 21	0 25	660	34		

NM = Not measured

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JOB 70111-2-0346 DATE 12/30/97 F.T. _____ DR. _____ O.E. SCS CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	BCA
4928B	14-Feb-97	1.1	4.2	0.51	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.063		0.25	<0.05	<0.04		0.34	VOC
4928B	26-Aug-97	0.78	2.5	<0.5	<0.5	<0.5	<0.1			<0.005	<0.01	<0.02	0.27		0.26	<0.05	<0.04		0.46	VOC

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APPENDIX B

GROUNDWATER CONTOUR MAPS

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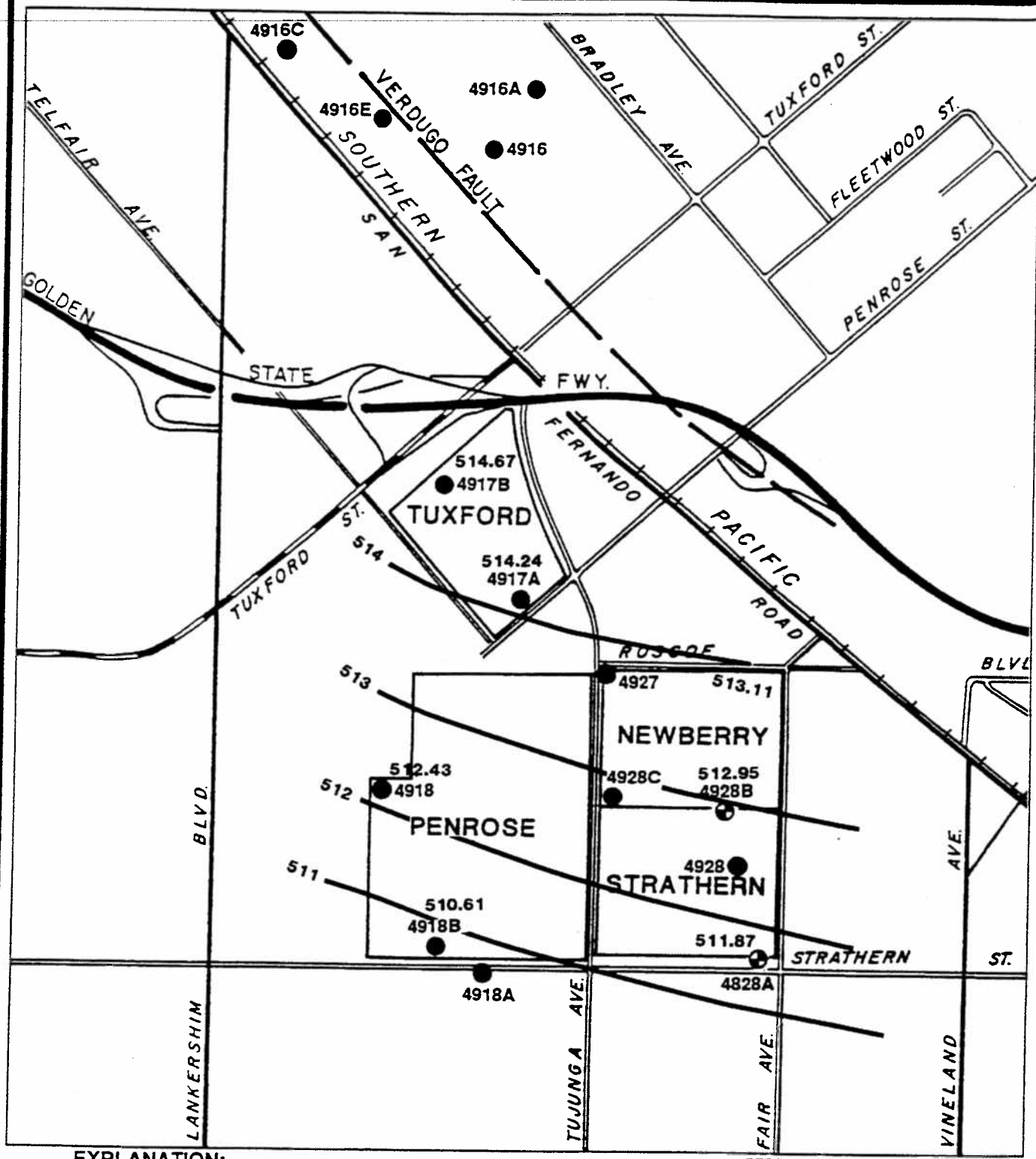

JOB 70111-2-0346.0001 DATE 4-9-97 F.T. ____ DR. MN ____ O.E. ____ CHKD ____

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 510.61 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

N

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

FEBRUARY 1997 GROUNDWATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

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FIGURE 2

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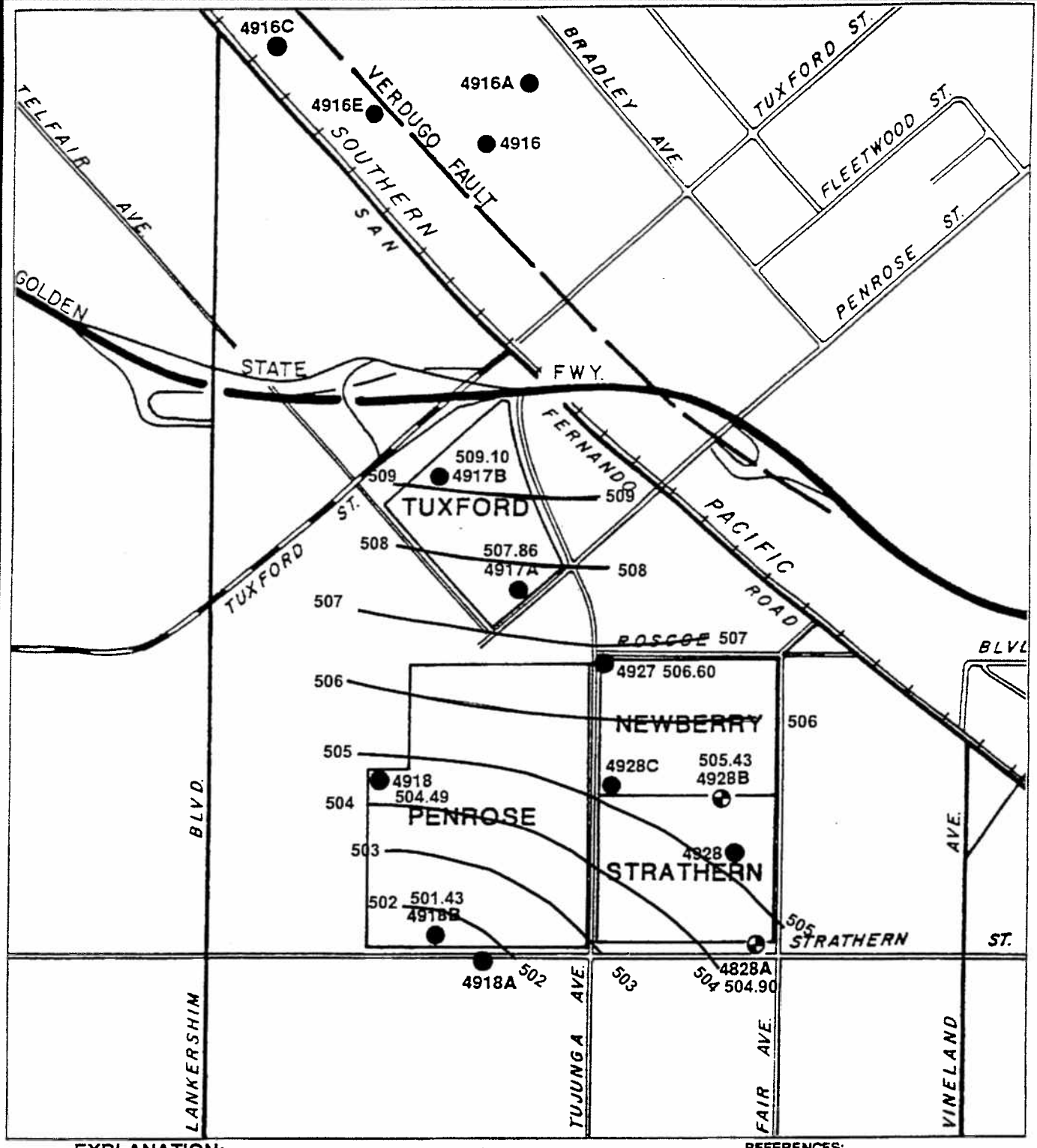

JOB 70111-2-0346.0001 DATE 10/24/97 F.I. DR. NH CHKD. KVF

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 504.90 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST 1997
GROUND WATER CONTOUR MAP
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

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FIGURE 2

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APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

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GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement to avoid cross-contamination between wells. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

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Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain-of-Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and

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time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to avoid breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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Our Quality Control is Your Quality Assurance

ANALYTICAL REPORT

LOG NO: G97-02-393

Received: 14 FEB 97

Mailed:

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	320	410
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	320	410
Calcium (6010), mg/L	100	110
Magnesium (6010), mg/L	27	31
Chloride (300.0), mg/L	30	29
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	<0.04	0.063
Manganese (6010), mg/L	<0.01	0.25
pH (150.1), Units	6.9	7.0
Potassium (6010), mg/L	5.6	5.6
Sodium (6010), mg/L	37	36
Sulfate (300.0), mg/L	59	51
Conductivity (120.1), umhos/cm	850	910
Dissolved Solids (160.1), mg/L	500	560
Zinc (6010), mg/L	0.35	0.34
Ion Balance (CALC), Percent	0.61	2.1
Nitrate (300.0), mg/L	37	8.6
Nitrite (300.0), mg/L	<0.2	<0.2
Digestion (3005), Date	02/21/97	02/21/97
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (300.0), mg/L	0.47	0.45
COD (410.4), mg/L	9.4	15
Boron (6010), mg/L	0.21	<0.2

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801 Western Avenue, Glendale, CA 91201 • **Phone:** (818) 247-5737 • **Fax:** (818) 247-9797

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04
Date Filtered	02/14/97	02/14/97

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
E524.2/VOC (524.2)		
Date Analyzed	02/21/97	02/21/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	0.58	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	3.2	3.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	0.51
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	2.5	6.5
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	1.0	1.1
Trichlorofluoromethane, ug/L	0.60	<0.5
Toluene, ug/L	<0.5	<0.5

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Tetrachloroethene, ug/L	9.4	4.2
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.04	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00
4-Bromofluorobenzene Rep., ug/L	5.18	5.04
4-Bromofluorobenzene Theo., ug/L	5.00	5.00

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-3	Trip Blank	14 FEB 97

PARAMETER	02-393-3
Sample Held, Not Analyzed	HOLD

R. Yaghoubi for GG
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location

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ANALYTICAL REPORT

LOG NO: G97-02-393

Received: 14 FEB 97

Mailed:

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
COD (410.4), mg/L	9.4	15
Boron (6010), mg/L	0.21	<0.2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04
Date Filtered	02/14/97	02/14/97

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
E524.2/VOC (524.2)		
Date Analyzed	02/21/97	02/21/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	0.58	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	3.2	3.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	0.51
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	2.5	6.5
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	1.0	1.1
Trichlorofluoromethane, ug/L	0.60	<0.5
Toluene, ug/L	<0.5	<0.5

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-393-1	4928A	14 FEB 97
02-393-2	4928B	14 FEB 97

PARAMETER	02-393-1	02-393-2
Tetrachloroethene, ug/L	9.4	4.2
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.04	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00
4-Bromofluorobenzene Rep., ug/L	5.18	5.04
4-Bromofluorobenzene Theo., ug/L	5.00	5.00

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Our Quality Control Is Your Quality Assurance

LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-02-393-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 14 FEB 97

Anions	mg/L	meq/L
Nitrate	37	0.6
Chloride	30	0.85
Sulfate	59	1.2
Bicarbonate (as HCO3)	390	6.4
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		9.1

Cations	mg/L	meq/L
Magnesium	27	2.2
Sodium	37	1.6
Potassium	5.6	0.14
Calcium	100	5
Total Millequivalents per Liter		8.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	320
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	110
Total Hardness	360
Iron	<0.04
Manganese	<0.01
Copper	<0.02
Zinc	0.35
Surfactants, MBAS	<0.1
Dissolved Solids	500
Sp. Conductance, umhos/cm	850
pH, units	6.9
Ion balance in percent	0.61

* Conforms to Title 22, California Administrative Code

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LOG NO: G97-02-393

Received: 14 FEB 97

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-02-393-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 14 FEB 97

Anions	mg/L	meq/L
Nitrate	8.6	0.14
Chloride	29	0.82
Sulfate	51	1.1
Bicarbonate (as HCO3)	500	8.2
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		10.3

Cations	mg/L	meq/L
Magnesium	31	2.6
Sodium	36	1.6
Potassium	5.6	0.14
Calcium	110	5.5
Total Millequivalents per Liter		9.8

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	410
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	130
Total Hardness	400
Iron	0.063
Manganese	0.25
Copper	<0.02
Zinc	0.34
Surfactants, MBAS	<0.1
Dissolved Solids	560
Sp. Conductance, umhos/cm	910
pH, units	7.0
Ion balance in percent	2.08

* Conforms to Title 22, California Administrative Code

003895

CHAIN OF CUSTODY RECORD

VOC Log Number 9731-0239

Client name: LAW/CRANDALL
Project or PO#: 70111-2-0346
Address: 200 Citadel DR.
Phone #: 213-889-5300
City, State, Zip: Los Angeles CA 90049
Report attention: Sandy Beitt
Sampled by: KVF

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gen Min	COD	Boron	Cd, Cr, Ni, Pb 524.2			Hazardous sample Special handling required	Remarks
	2/14/97	10:00	GW	4928A	8	✓	✓	✓	✓	✓			
	2/14/97	12:00	GW	4928B	8	✓	✓	✓	✓	✓			
	2/14/97			Trip blank	2								hold
													→ metals needs to be filtered and preserved

Analyses required

	Signature	Print Name	Company	Date	Time
Relinquished by	Kathy Foley Law/Crandall	Kathy Foley	Law/Crandall	2/14/97	2:20
Received by	Sharon Malone	S Malone	VOC	2-14-97	14:20
Relinquished by					
Received by					
Relinquished by					
Received by Leboratory					

VOC ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Wey, Anehelm, CA 92805 (714) 978-0113
- ☐ 4411 S. 40th Street, Phoenix, AZ 85040 (602) 470-9707

Note: Samples are discarded 30 days efter results are reported unless other arrangements are mede. Hazerdous samples will be returned to client or disposed of at client's expense.

Disposal errangements: _____

KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

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ANALYTICAL REPORT

LOG NO: G97-08-507
Received: 26 AUG 97
Mailed:

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	330	490
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	330	490
Calcium (6010), mg/L	110	150
Magnesium (6010), mg/L	27	41
Chloride (300.0), mg/L	38	38
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.13	0.27
Manganese (6010), mg/L	<0.01	0.26
pH (150.1), Units	6.6	6.6
Potassium (6010), mg/L	5.5	6.4
Sodium (6010), mg/L	41	45
Sulfate (300.0), mg/L	69	48
Conductivity (120.1), umhos/cm	890	1000
Dissolved Solids (160.1), mg/L	590	660
Zinc (6010), mg/L	0.30	0.46
Ion Balance (CALC), Percent	1.4	4.2
Nitrate (300.0), mg/L	50	6.0
Nitrite (300.0), mg/L	<0.2	<0.2
Digestion (3005), Date	09/02/97	09/02/97
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (300.0), mg/L	0.25	0.25
COD (410.4), mg/L	<6	34
Boron (6010), mg/L	0.25	0.21

VOC Analytical Laboratories, Inc.
801 Western Avenue, Glendale, CA 91201 - **Phone:** (818) 247-5737 - **Fax:** (818) 247-9797

LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
E524.2/VOC (524.2)		
Date Analyzed	09/06/97	09/06/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	2.1	2.3
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<1	<1
1,2,3-Trichloropropane, ug/L	<1	<1
1,2,4-Trichlorobenzene, ug/L	<1	<1
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.63
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<1	<1
Dichlorodifluoromethane, ug/L	<0.5	3.0
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<1	<1
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	0.69	0.78
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<0.5	<0.5

CONFIDENTIAL

LOG NO: G97-08-507

Received: 26 AUG 97

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Tetrachloroethene, ug/L	7.8	2.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichloroethane-d4 Rep., ug/L	8.57	10.5
1,2-Dichloroethane-d4 Theo., ug/L	10.0	10.0
4-Bromofluorobenzene Rep., ug/L	9.56	9.19
4-Bromofluorobenzene Theo., ug/L	10.00	10.0
Toluene-d8 Reported, ug/L	9.04	8.95
Toluene-d8 Theo., ug/L	10.0	10.0
Dibromofluoromethane Rep., ug/L	9.07	9.58
Dibromofluoromethane Theo., ug/L	10.0	10.0

LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-3	Trip Blank	26 AUG 97

PARAMETER	08-507-3
Sample Held, Not Analyzed	HOLD

Linda Geddes for GG
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location

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CONFIDENTIAL
ANALYTICAL REPORT

LOG NO: G97-08-507

Received: 26 AUG 97

Mailed:

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
COD (410.4), mg/L	<6	34
Boron (6010), mg/L	0.25	0.21
Cadmium (6010), mg/L	<0.005	<0.005
Chromium (6010), mg/L	<0.01	<0.01
Lead (6010), mg/L	<0.05	<0.05
Nickel (6010), mg/L	<0.04	<0.04

LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
E524.2/VOC (524.2)		
Date Analyzed	09/06/97	09/06/97
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	2.1	2.3
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<1	<1
1,2,3-Trichloropropane, ug/L	<1	<1
1,2,4-Trichlorobenzene, ug/L	<1	<1
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.63
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Bromobenzene, ug/L	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dibromomethane, ug/L	<1	<1
Dichlorodifluoromethane, ug/L	<0.5	3.0
Ethylbenzene, ug/L	<0.5	<0.5
Freon 113, ug/L	<1	<1
Hexachlorobutadiene, ug/L	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.5	<0.5
Trichloroethene, ug/L	0.69	0.78
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<0.5	<0.5

CONFIDENTIAL

LOG NO: G97-08-507

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-507-1	4938A	26 AUG 97
08-507-2	4928B	26 AUG 97

PARAMETER	08-507-1	08-507-2
Tetrachloroethene, ug/L	7.8	2.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichloroethane-d4 Rep., ug/L	8.57	10.5
1,2-Dichloroethane-d4 Theo., ug/L	10.0	10.0
4-Bromofluorobenzene Rep., ug/L	9.56	9.19
4-Bromofluorobenzene Theo., ug/L	10.00	10.0
Toluene-d8 Reported, ug/L	9.04	8.95
Toluene-d8 Theo., ug/L	10.0	10.0
Dibromofluoromethane Rep., ug/L	9.07	9.58
Dibromofluoromethane Theo., ug/L	10.0	10.0

LOG NO: G97-08-507

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Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-08-507-1
Sample Description: 4938A

General Mineral Analysis
Sampled Date 26 AUG 97

Anions	mg/L	meq/L
Nitrate	50	0.81
Chloride	38	1.1
Sulfate	69	1.4
Bicarbonate (as HCO3)	400	6.6
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		9.9

Cations	mg/L	meq/L
Magnesium	27	2.2
Sodium	41	1.8
Potassium	5.5	0.14
Calcium	110	5.5
Total Millequivalents per Liter		9.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	0
Carbonate Alk (as CaCO3)	0
Bicarbonate Alk (as CaCO3	330
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	110
Total Hardness	380
Iron	0.13
Manganese	0.001
Copper	0.002
Zinc	0.30
Surfactants, MBAS	0
Dissolved Solids	590
Sp. Conductance, umhos/cm	890
pH, units	6.6
Ion balance in percent	1.38

* Conforms to Title 22, California Administrative Code

003907

CONFIDENTIAL

LOG NO: G97-08-507

Received: 26 AUG 97

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 97-08-507-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 26 AUG 97

Anions	mg/L	meq/L
Nitrate	6.0	0.097
Chloride	38	1.1
Sulfate	48	1
Bicarbonate (as HCO3)	600	9.8
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		12.0

Cations	mg/L	meq/L
Magnesium	41	3.4
Sodium	45	2
Potassium	6.4	0.16
Calcium	150	7.5
Total Millequivalents per Liter		13.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	0
Carbonate Alk (as CaCO3)	0
Bicarbonate Alk (as CaCO3	490
Ca Hardness (as CaCO3)	370
Mg Hardness (as CaCO3)	170
Total Hardness	540
Iron	0.27
Manganese	0.26
Copper	0
Zinc	0.46
Surfactants, MBAS	0
Dissolved Solids	660
Sp. Conductance, umhos/cm	1000
pH, units	6.6
Ion balance in percent	4.24

* Conforms to Title 22, California Administrative Code

003998

VOC Analytical Laboratories

1212 E. KATELLA AVE.
ANAHEIM, CA 92805

801 WESTERN AVE.
GLENDALE, CA 91201

1085 SHARY CIRCLE
CONCORD, CA 94518

4411 S. BROADWAY Ste D-1
PHOENIX, AZ 85040

V.O.C. Log # 69708SD7

Chain of Custody Record

Quote # _____

Company Name Law/Crandall

Address 200 Citadel Dr.

City Los Angeles State CA Zip 90040

Attn: Sandy Britt Fax # 213-721-6700

Project Name / Number 70111-2-0346 PO#

Sampler Name / Signature KVF Phone # 213-889-5300

#	Sample Label (Client ID)	Collected Date	Collected Time	Matrix Code*	#of Cont
1	1928A	8/26/97	10:15	GW	8
2	1928B	8/26/97	11:45	GW	8
3	Trip blank				
4					
5					
6					
7					
8					
9					
0					

LAB ANALYSIS

Parameters	Gen. Min.	Boron	COD	Cd, Cr, Ni, Pb	524.2	Field Filtered (Y/N)	Integrity OK (Y/N)
Sample							
pH							
Pres Codes							
1	✓	✓	✓	✓	✓		
2	✓	✓	✓	✓	✓		

Matrix Codes *

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H_2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water	PE	Petroleum
SU	Surface Water	O	Other _____ (Please Specify)

Pres Codes

A- None	E- HCl
B- HNO_3	F- MeOH
C- H_2SO_4	I- Ice
D- NaOH	O- Other

REMARKS

metals needs to be filtered.
hold trip blank.

Short Hold Y____ N____

Ice Y____ N____

QA/QC Report Level None____ 1____ 2____ 3____ Other____

COC OK Y N | Initials

T.A.T. Request: Standard

RUSH: Date required

Custody Seals Y N

Temp Control ____°C

Local Job Y N

Item	Relinquished by	Date	Time	Received by	Date	Time
	Kathy Foley	8/26/97	12:42	Sharon Malone	8/26/97	1242

C.O.C. # 1003692

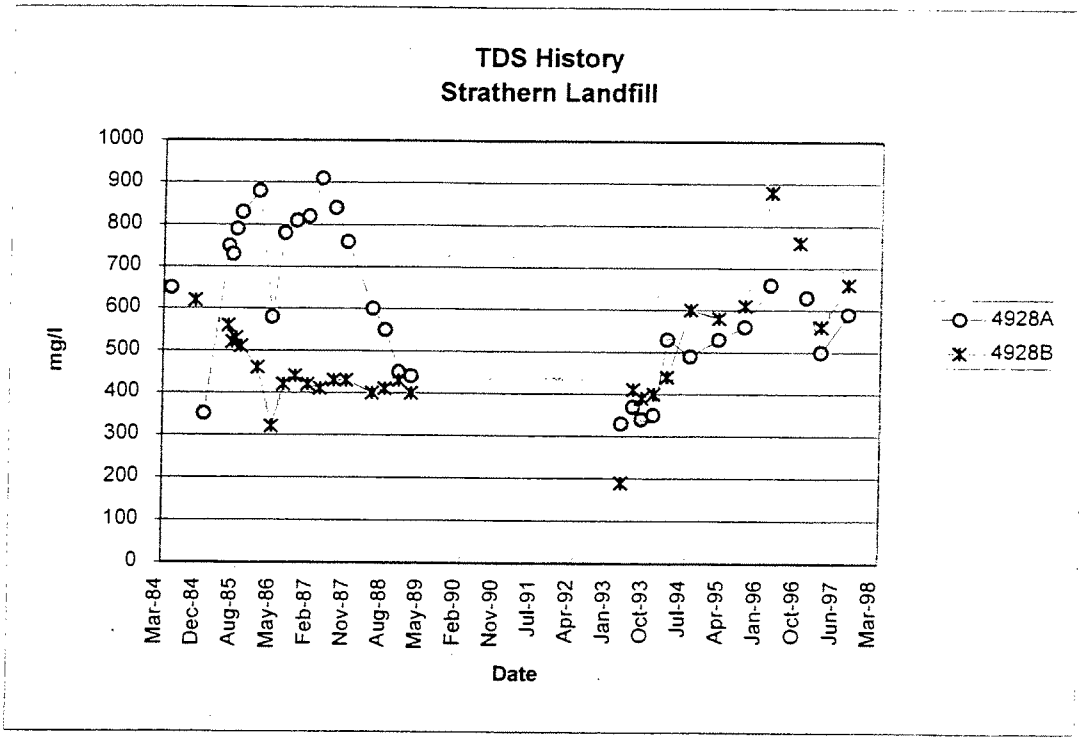
003692

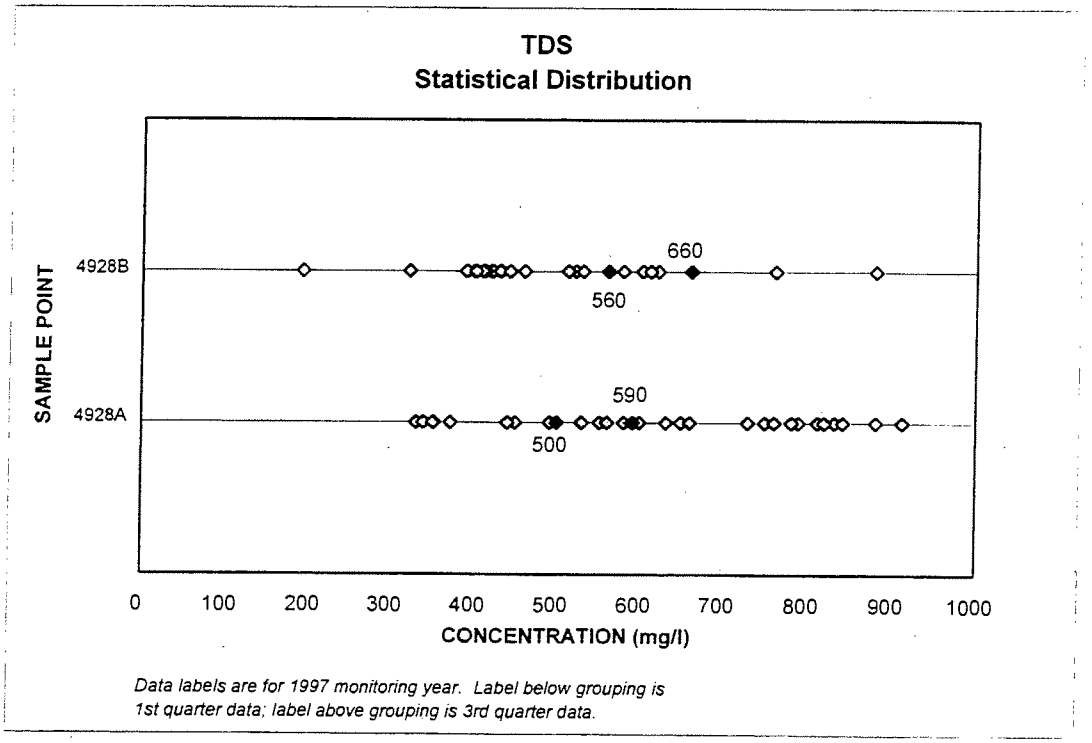
CONFIDENTIAL

APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

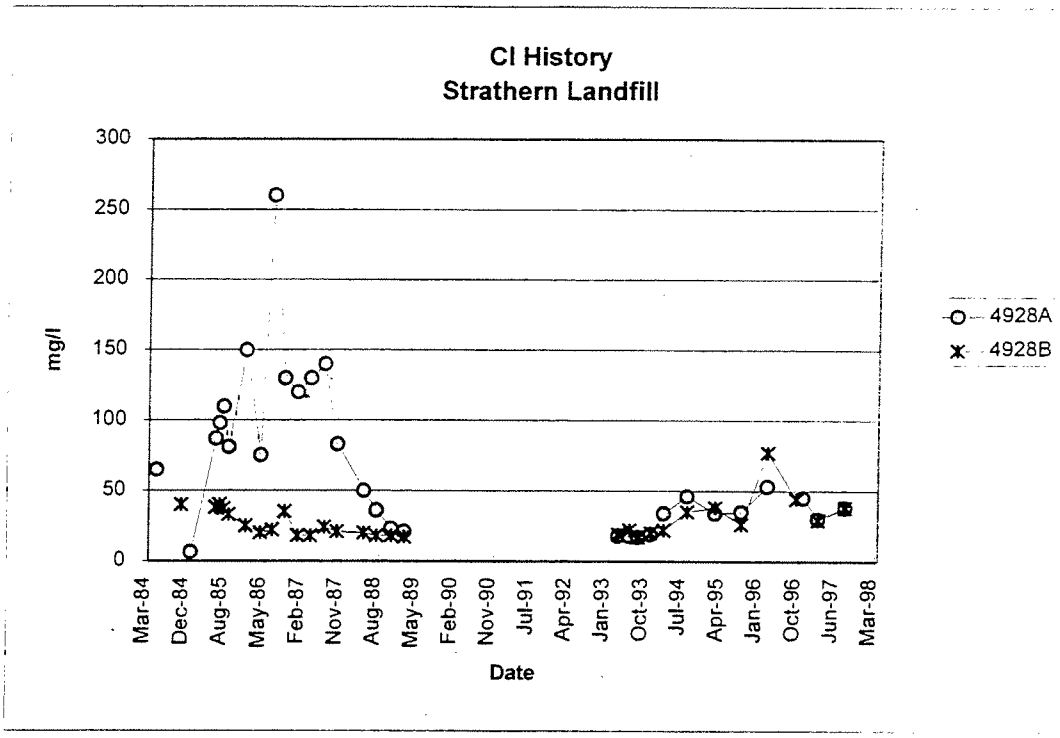
JOB 7011-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SCS CHKD _____

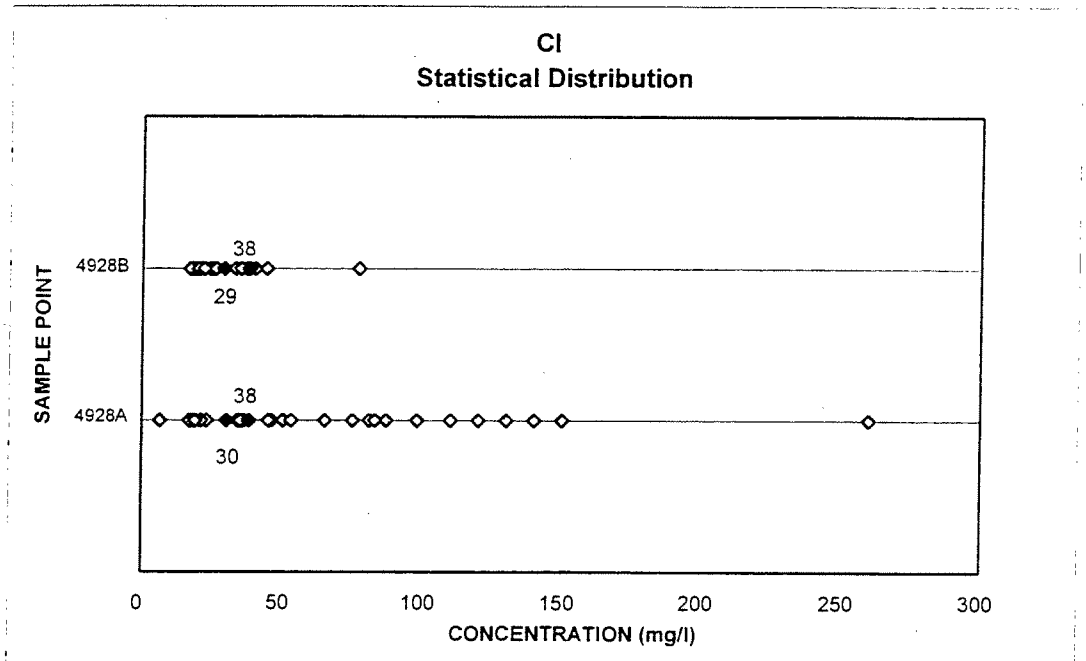




Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

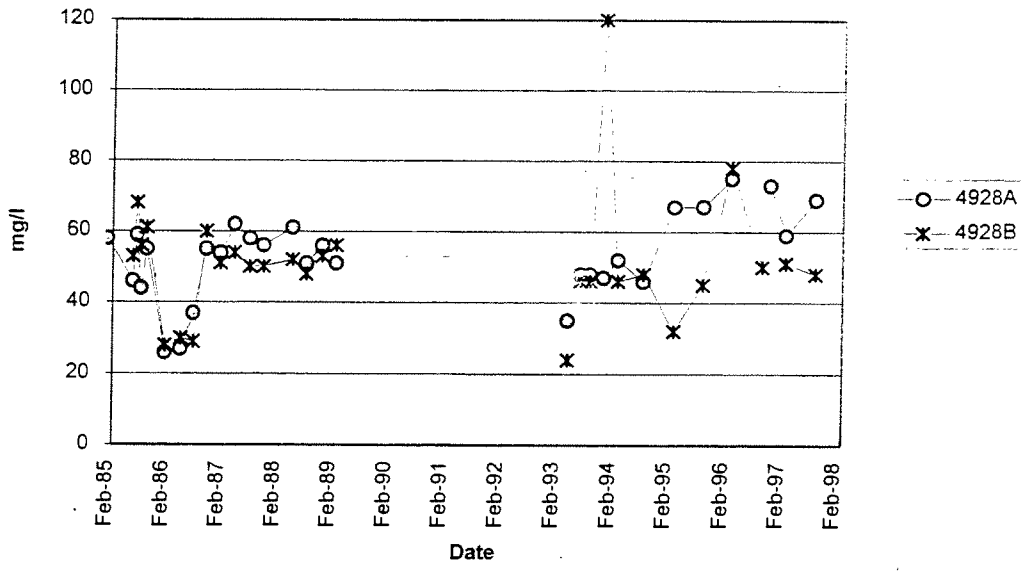
JOB 7011-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SCS CHKD _____

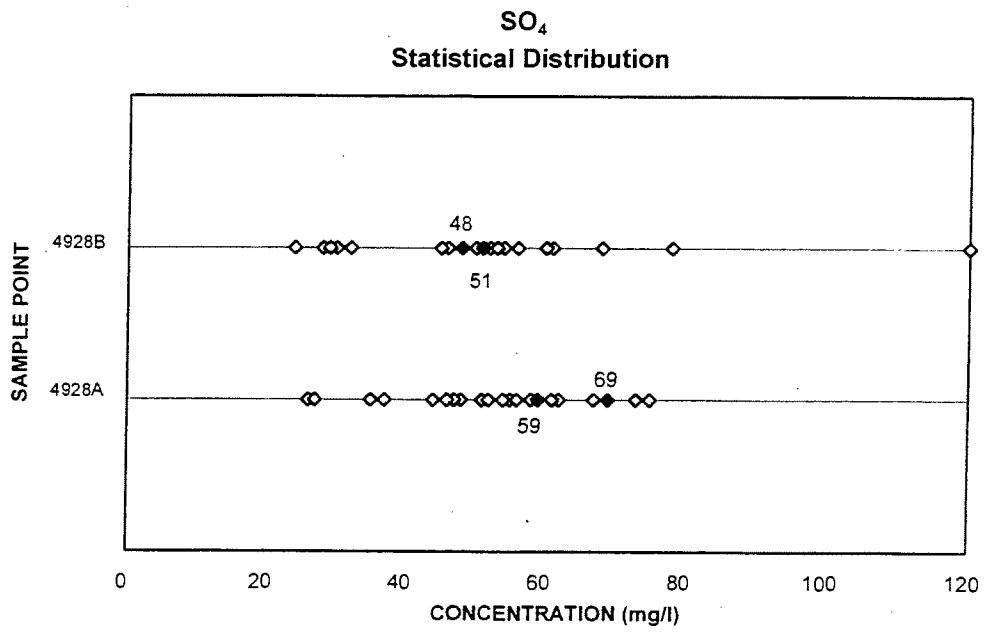




Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

JOB 7011-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SCS CHKD _____

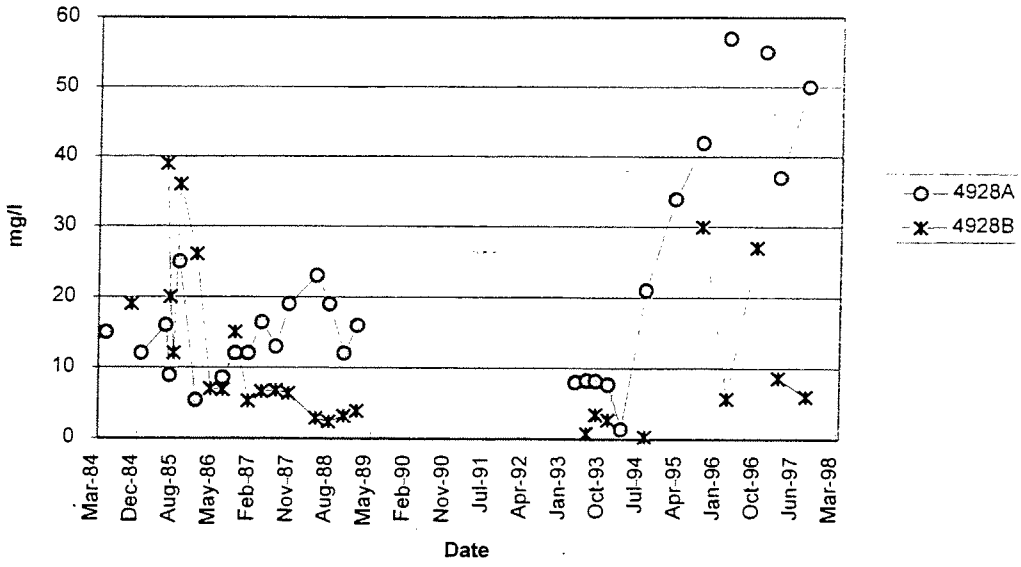


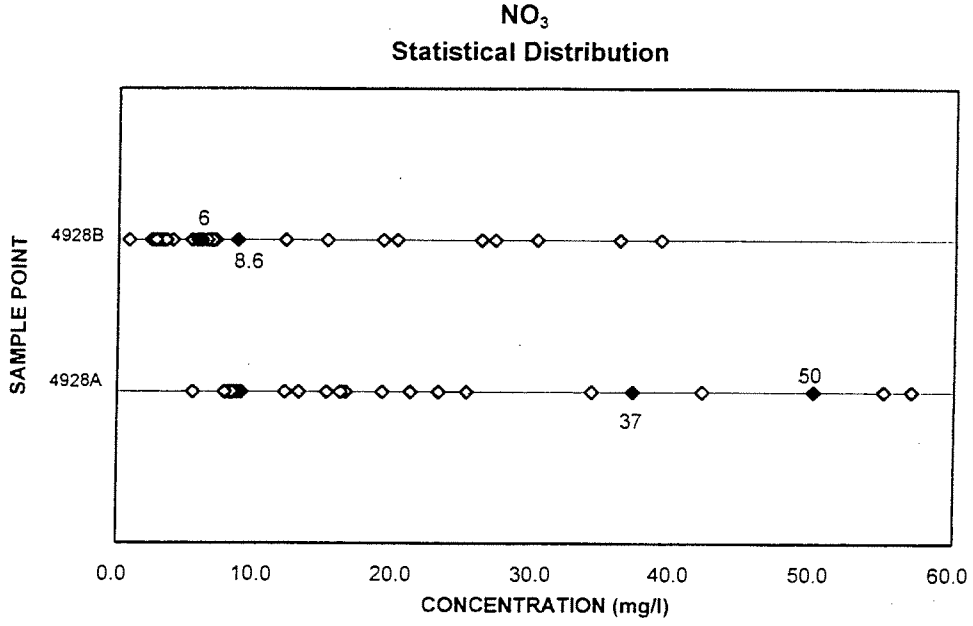


Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

JOB 70111-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SCB CHKD _____

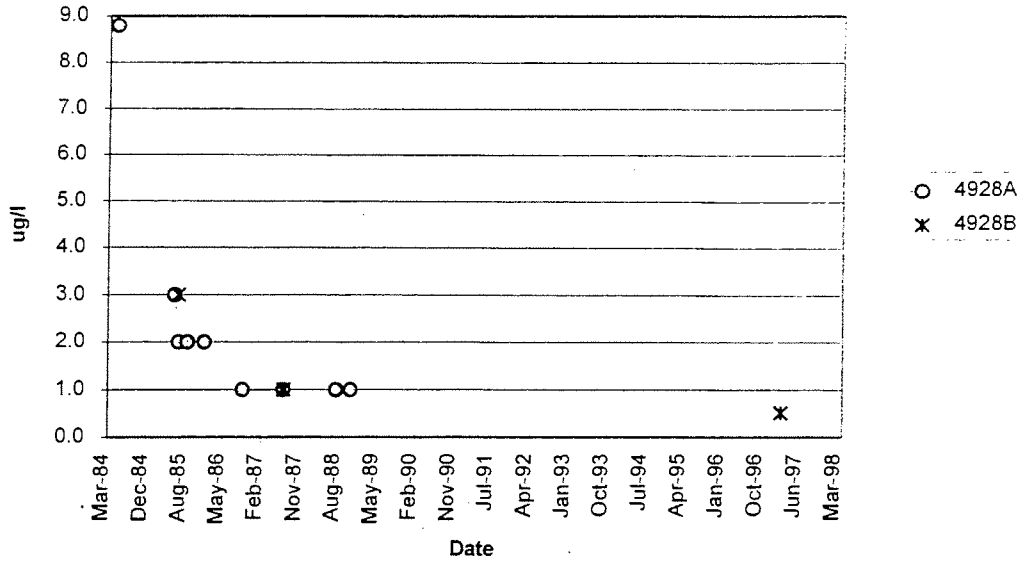




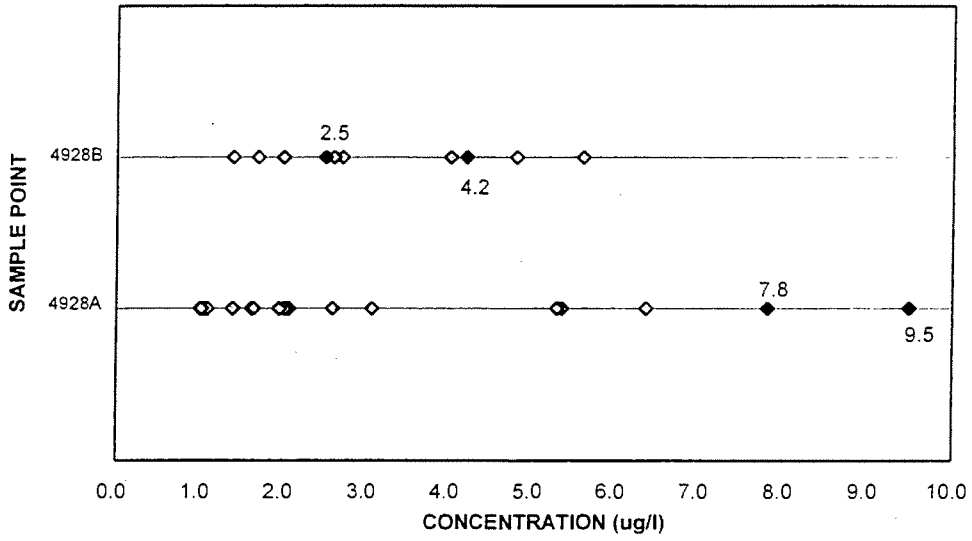
Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

JOB 7011-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SLB CHKD _____

1,2-DCE History
Strathern Landfill

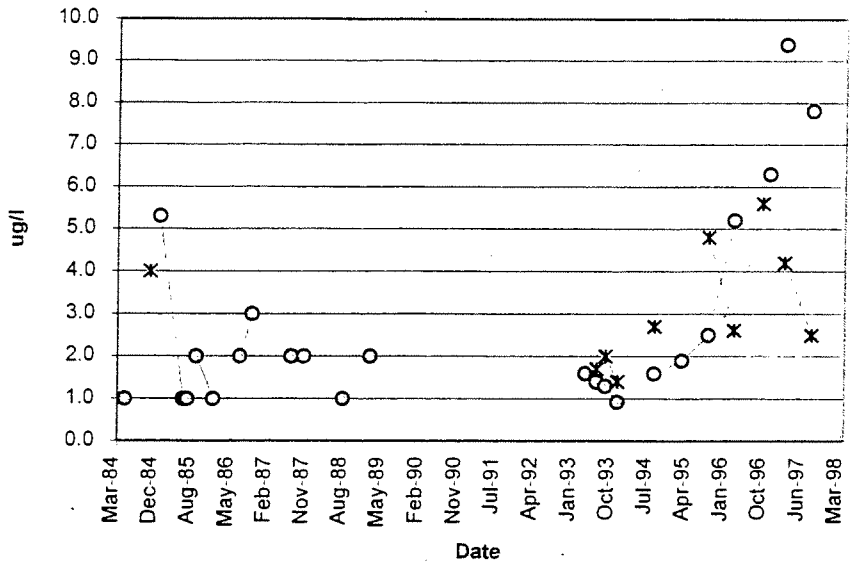


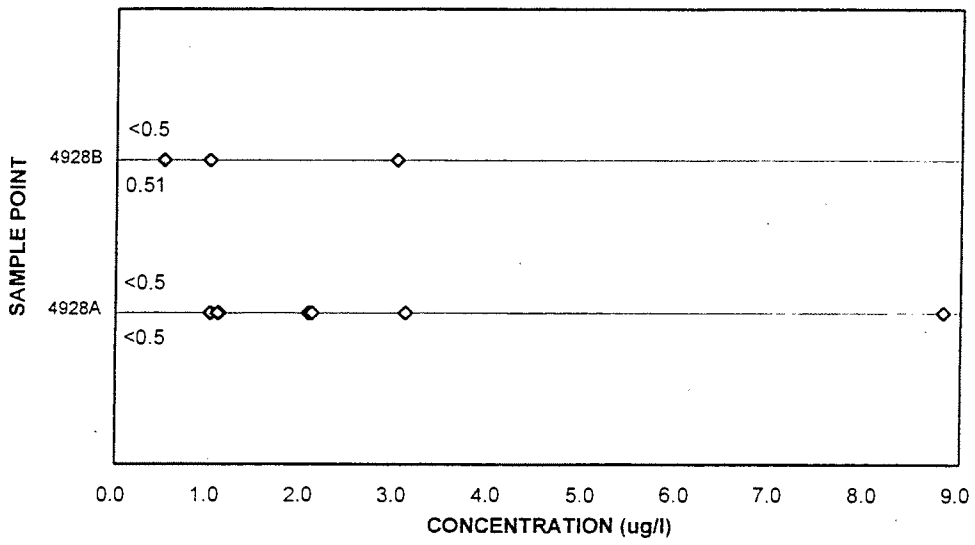
PCE
Statistical Distribution



Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

JOB 70111-2-0346 DATE 1-23-98 F.T. _____ DR. _____ O.E. SLB CHKD _____





Data labels are for 1997 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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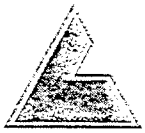

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

1996 ANNUAL REPORT

GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company
Los Angeles, California

Law/Crandall Project 70111-2-0346

January 29, 1997

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CONFIDENTIAL

LAW/CRANDALL
A DIVISION OF LAW ENGINEERING
AND ENVIRONMENTAL SERVICES, INC.

January 29, 1997

Mr. Mike McAllister

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **1996 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 1996 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells fell slightly but remain relatively high due to precipitation during the winter months and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. Inorganic groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese and total dissolved solids (TDS). Organic groundwater quality met California Drinking Water Standards for the parameters measured, except for tetrachloroethene which was slightly over drinking water standards. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents background information, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

SITE DESCRIPTION

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

MONITORING REQUIREMENTS

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains an annual summary of the 1996 groundwater monitoring program. Law/Crandall collected groundwater samples in February, September, and October of 1996 and prepared this report. BC Analytical Laboratories performed the chemical analyses. BC Analytical is certified for such analyses by the State Department of Health Services.

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MONITORING WELL NETWORK

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1996 monitoring results, including groundwater levels and groundwater quality.

GROUNDWATER LEVELS

Law/Crandall measured groundwater levels in February and August of 1996. Groundwater levels fell 1 to 2 feet in the monitoring wells between February and August this year. Water levels remain relatively high due to precipitation during the winter months and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for February and August. Appendix B contains these contour maps.

GROUNDWATER FLOW VELOCITY AND DIRECTION

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional

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direction is to the south. Since groundwater gradient was to the south during the year, we calculated K in that direction. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient between the two monitoring wells was 0.0017 ft/ft in February and 0.001 ft/ft in August. Groundwater flow for February was 1 ft/day or 372 ft/year. In August, flow was 0.6 ft/day or 220 ft/year. At these flow velocities it would take 1 to 1.6 years for groundwater to flow from the north side of the property to the south side.

GROUNDWATER QUALITY

We collected groundwater samples from wells 4928A and 4928B for the first quarter on February 23, 1996 and for the third quarter in September and October 1996. We collected groundwater samples from well 4928B on September 11, 1996. Groundwater samples could not be collected in September from well 4928A because the well's pump was not operating. Operation of the pump was restored, and we collected samples from well 4928A on October 31, 1996. We measured carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Lab analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from BCA of groundwater samples collected in 1996. Appendix D also contains the chain-of-custody records.

Inorganics

Laboratory analyses indicated that during 1996, the groundwater met California Drinking Water Standards for most constituents. However, levels of manganese, total dissolved solids (TDS), and nitrate exceeded drinking water limits. Table 2 shows selected 1996 results compared to Drinking Water Standards.

TDS levels may be related to changes in groundwater levels. Increases in TDS levels appear to coincide with the higher water levels. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels rose, dissolved solids increased. Water levels continue to remain high as do TDS levels.

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Table 2: Site Water Quality vs. California Drinking Water Standards
1996 Cumulative Data

Constituent	Recommended Maximum Contaminant Level*	Water Source			
		4928A		4928B	
		Feb	Oct	Feb	Sept
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	660	630	880	760
Chloride (Cl)	250	53	45	77	44
Sulfate (SO_4)	250	75	73	78	50
Nitrate (NO_3)	45	57	55	5.7	27
Iron (Fe)	0.3	2.80	0.15	24	<0.4
Manganese (Mn)	0.05	0.060	<0.01	0.98	.064
Zinc (Zn)	5	1.5	0.32	2.3	0.26
Organic (ug/L)					
Trichloroethylene (TCE)	5	0.54	0.56	1.3	1.4
Tetrachloroethylene (PCE)	5	5.2	6.3	2.6	5.6
Trichlorofluoromethane	150	<0.5	<0.5	<0.5	0.60
Methylene Chloride	5	<1	<1	<1	1.6
Dichlorodifluoromethane	--	<0.5	1.3	<0.5	3.9
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	2.3	1.2
1,1-dichloroethane (1,1-DCA)	5	1.9	2.2	3.5	4.4
1,1,1-trichloroethane (1,1,1-TCA)	200	<0.5	<0.5	<0.5	0.52

** Source: CCR, Title 22, Division 4, Chapter 15*

Manganese also exceeded drinking water standards. We indicated in previous reports that the rising water levels, in combination with lower groundwater pH and sample bottle acid preservative, increased metals concentration. Low water levels prior to 1993 exposed the steel well screens to air and likely resulted in corrosion of the exposed screen. As water levels rose

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between 1993 and now, the corroded screen was resubmerged. Also, the pH level has declined in well 4928B. The more acidic groundwater (lower pH levels) in contact with rust particles in the well casings may have been a source of higher metals concentrations. Manganese levels seem to fluctuate with groundwater level, similar to the TDS levels.

Nitrate levels in both upgradient and downgradient monitoring wells are at or near their historic highs. Elevated nitrate levels seem to be associated to some degree with high water levels but this does not explain the current levels completely. Strathern landfill accepts only inert fill. No high nitrogen containing wastes (e.g. sewage wastes) are deposited at the landfill. We suspect another source has elevated nitrated levels in both upgradient and downgradient wells.

Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents. Figure 4 shows a Schoeller plot of inorganic laboratory results from samples collected during September and October of 1996. The plot shows groundwater at the site is a calcium-bicarbonate water. Sodium and potassium concentrations are slightly elevated which indicates that the groundwater has been "softened" at both upgradient and downgradient wells. The levels of sulfate are relatively lower in upgradient well 4928B, and the carbonate/bicarbonate levels are higher than calcium levels which is reflective of a slighly lowered pH.

Organics

During 1996, trace amounts of trichloroethylene (TCE), tetrachloroethylene (PCE), trichlorofluoromethane, 1,1,1-trichloroethane (1,1,1-TCA), 1,2-dichlorobenzene (1,2-DCB), 1,1-dichloroethane (1,1-DCA), dichlorodifluoromethane, trichlorofluoromethane, and methylene chloride (dichloromethane) were detected in upgradient monitoring well 4928B. Trace amounts of TCE, PCE, 1,1-DCA, dichlorodifluoromethane were detected in downgradient well 4928A. Levels were below California Drinking Water Standards except for PCE, which was slightly above the drinking water limit in both upgradient and downgradient wells.

No definite pattern has emerged from the volatile organic sampling data. The landfill does not appear to be the source since concentrations of organics observed in samples from upgradient well 4928B have been higher than concentrations in samples from downgradient well 4928A. In

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addition, some of the volatile organics observed in samples from well 4928B have not been observed in samples from downgradient well 4928A. Appendix E contains water quality history and statistical distribution graphs of selected groundwater constituents.

CONCLUSIONS AND RECOMMENDATIONS

Water levels remain high due to precipitation during the winter months and recharge operations at the Hansen, Branford, and Tujunga spreading grounds. There seems to be a correlation between high water levels and higher levels of both total dissolved solids, manganese, and nitrates. Nitrate levels are at or near their historic highs in both the upgradient and downgradient wells. No high nitrogen containing wastes are disposed at the landfill and we suspect an off-site source of the elevated nitrates. Elevated metals concentrations (i.e. iron) do not appear to reflect changes to the groundwater but of the well and sampling proceedures. Trace concentrations of several organic compounds have appeared intermittently, yet persistently, over time at both upgradient and downgradient monitoring wells. Because the site receives only solid inert waste from a small group of disposers and the amount of water-soluble material is negligible, the potential for contamination from the landfill continues to be low. We recommend Strathern pay close attention to future nitrate sampling data, and if warranted, try to find the off-site source. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

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We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, ***a division of Law Engineering and Environmental Services, Inc.***

Sanford L. Britt
Project Geologist

William J. O'Braitis, C.E.G. 2037
Senior Geologist

Richard W. Shatz, C.H.G. 84
Principal Hydrogeologist

I:\70111\20346\03461RQ3.DOC/SLB
(3 copies submitted)

cc: Regional Water Quality Control Board - Technical Support Unit

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 30 day of JANUARY, 1997, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
President

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Our Quality Control Is Your Quality Assurance

ANALYTICAL REPORT

LOG NO: G96-10-733
Received: 31 OCT 96
Mailed: NOV 20 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Alkalinity (310.1)	
Carbonate Alk (as CaCO3), mg/L	<10
Bicarbonate Alk (as CaCO3), mg/L	360
Hydroxide Alk (as CaCO3), mg/L	<10
Total Alkalinity (as CaCO3), mg/L	360
Calcium (6010), mg/L	120
Magnesium (6010), mg/L	30
Chloride (300.0), mg/L	45
Copper (6010), mg/L	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1
Iron (6010), mg/L	0.15
Manganese (6010), mg/L	<0.01
pH (150.1), Units	7.1
Potassium (6010), mg/L	6.4
Sodium (6010), mg/L	47
Sulfate (300.0), mg/L	73
Conductivity (120.1), umhos/cm	960
Dissolved Solids (160.1), mg/L	630
Zinc (6010), mg/L	0.32
Ion Balance (CALC), Percent	1.1
Nitrate (300.0), mg/L	55
Nitrite (300.0), mg/L	<5
Digestion (3005), Date	11/01/96
Aluminum (6010), mg/L	<0.1
Fluoride (300.0), mg/L	0.48
COD (410.4), mg/L	<6
Boron (6010), mg/L	0.26
Cadmium (6010), mg/L	<0.01

BCA—Division of V.O.C. Analytical Laboratories, Inc.
801 Western Avenue, Glendale, CA 91201 • Phone: (818) 247-5737 • Fax: (818) 247-9797

FIGURES

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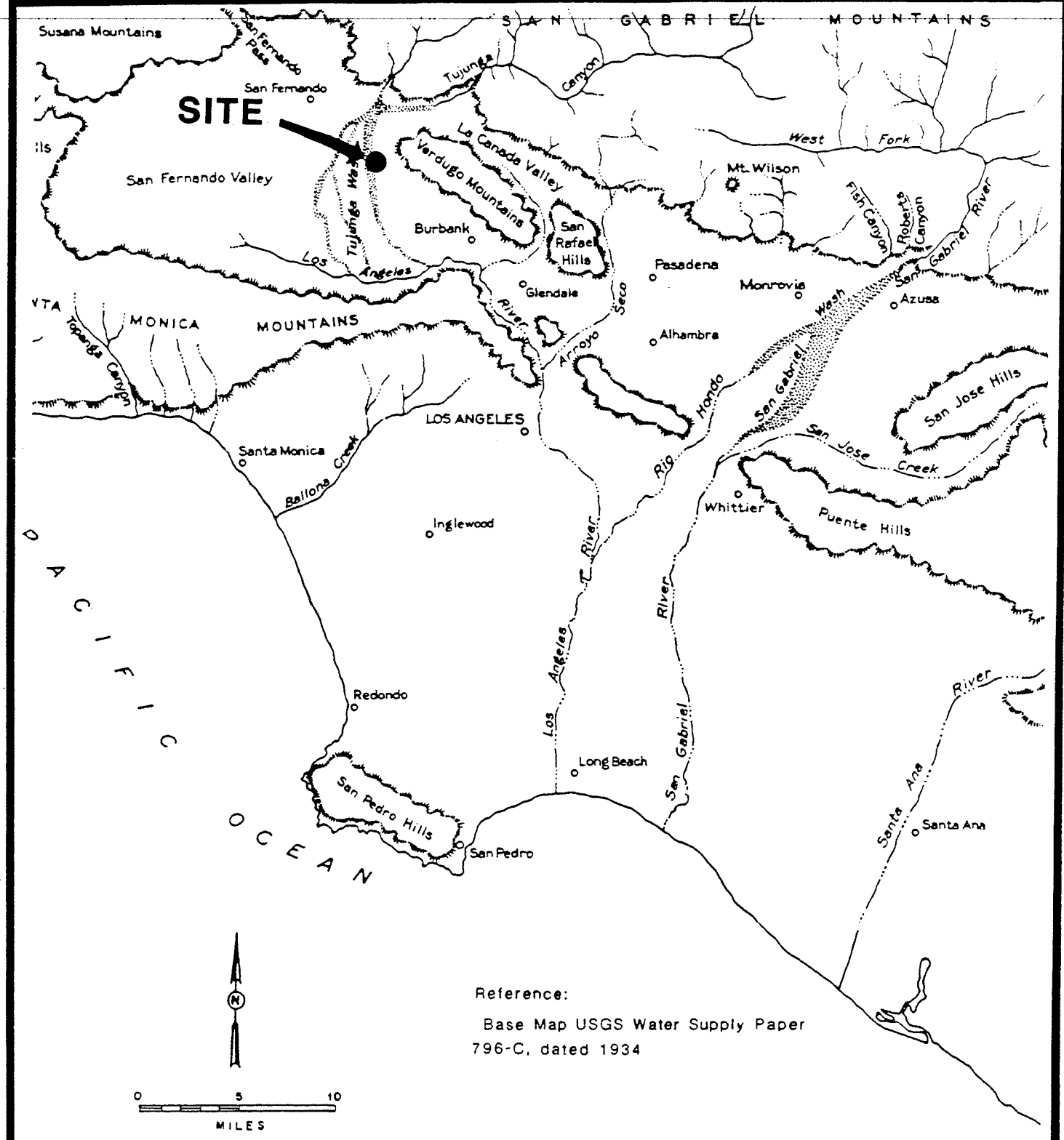

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

003928 FIGURE 1

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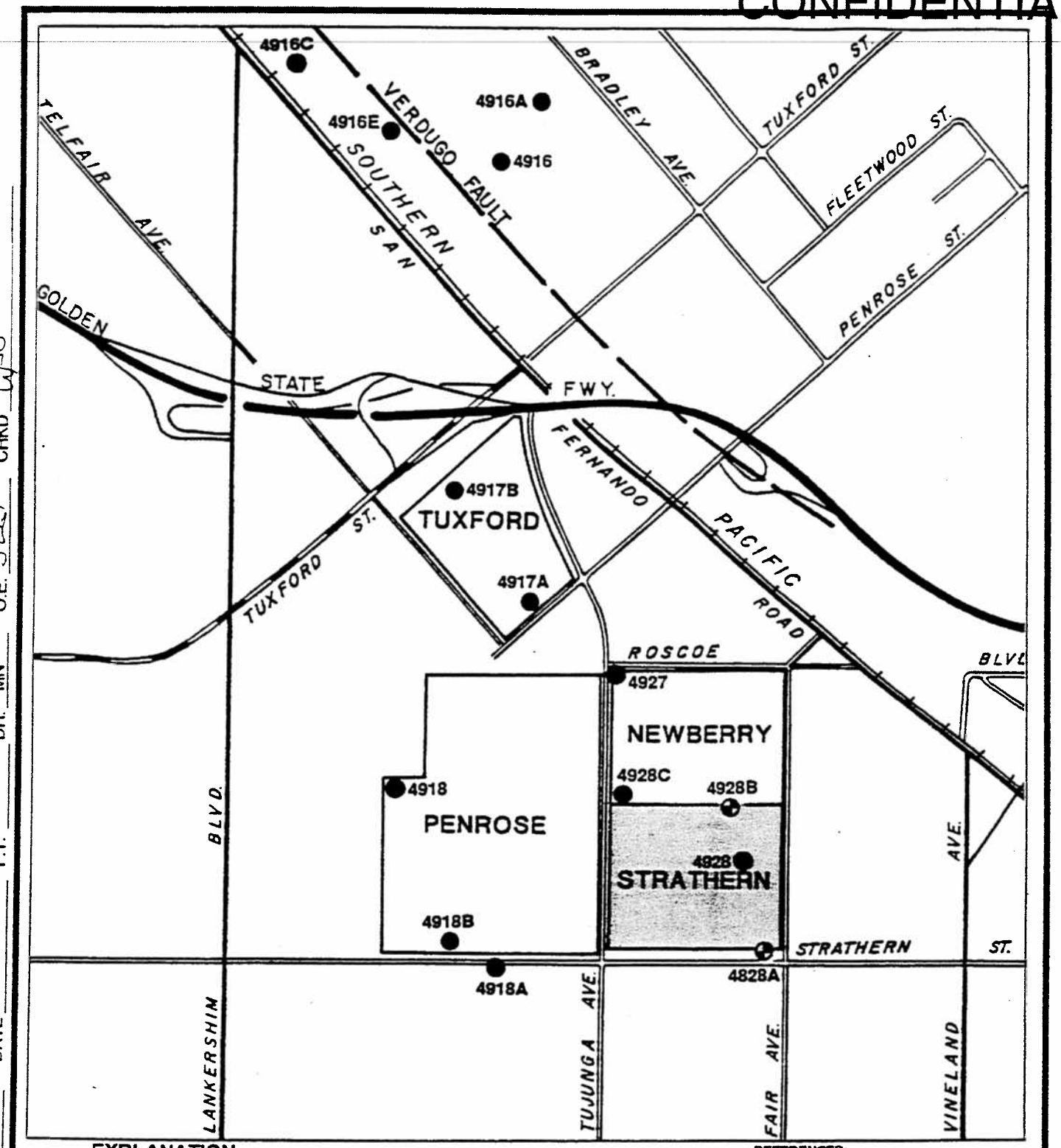


EXPLANATION:

4928 MONITORING WELL LOCATION AND NUMBER

4828B OTHER NEARBY MONITORING WELL

GROUND WATER SURFACE ELEVATION IN FEET ASL.

LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MONITORING WELL LOCATIONS

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

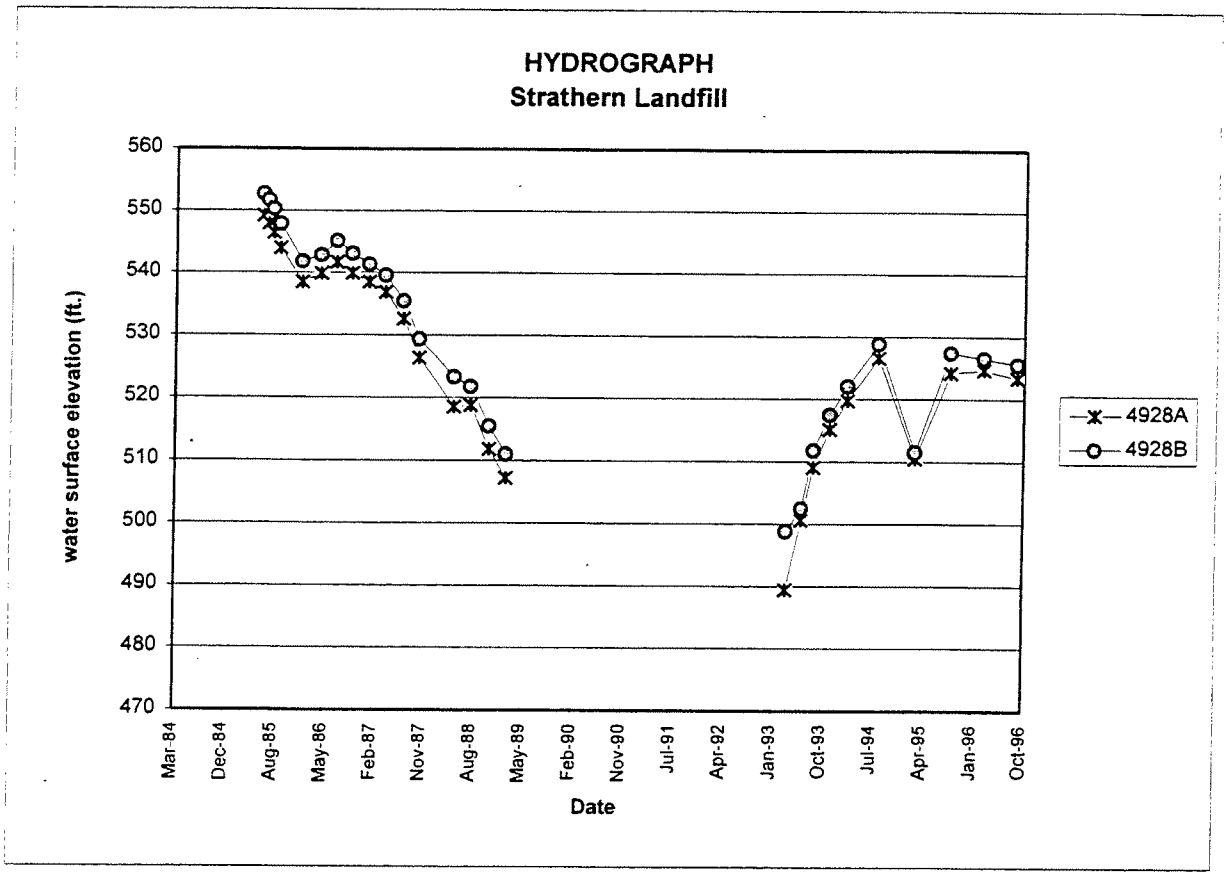
LAW/CRANDALL, INC.

JOB 70111-2-0546 DATE 1-19-96 F.T. DR. MN O.E. SLB CHKD WJO

FIGURE 2

003929

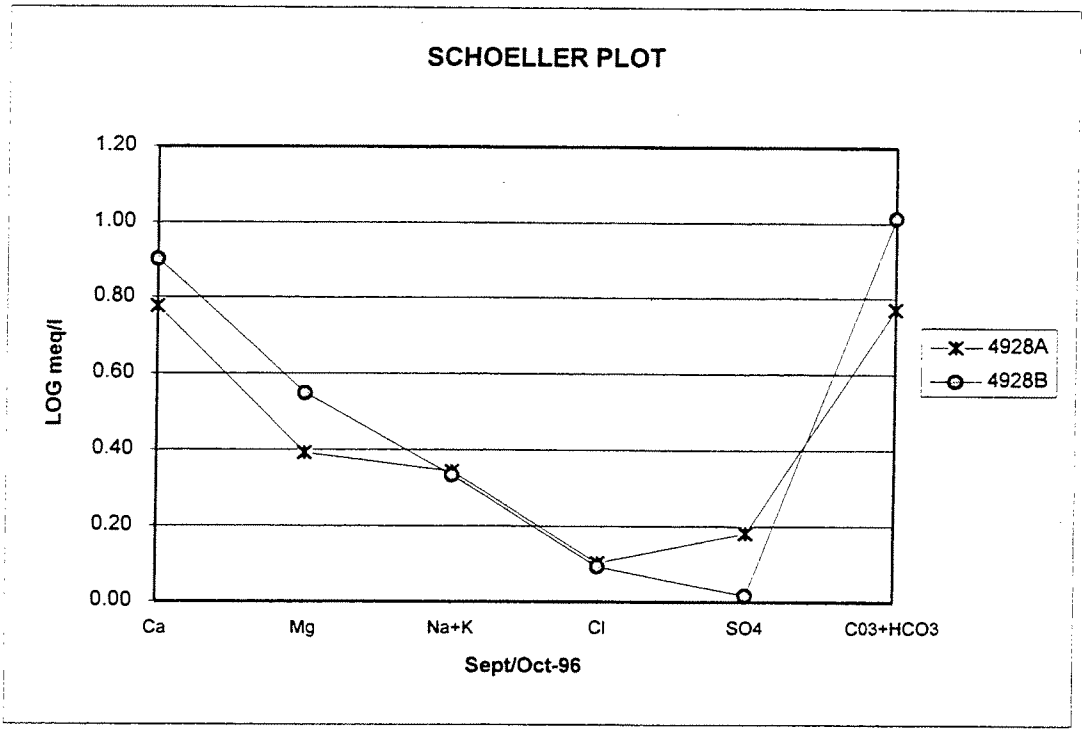
JOB 7011-2-0846 DATE 12-26-96 F.T. _____ DR. _____ O.E. SLS CHKD _____



LAW/CRANDALL, INC.

FIGURE 3

JOB 7011.02-034.6 DATE 1-21-97 F.T. _____ DR. _____ O.E. SLB CHKD _____



LAW/CRANDALL

FIGURE 4

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 12/26/96 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		536.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	46	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		
4928A	23-Feb-96		524.74	7.0	65	1015	75	400	1100	6.8	120	53	48	5.9	<10	380	75	53	57	0.32	0.45	660	<6		
4928A	23-Aug-96		523.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	11-Sep-96		NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4928A	31-Oct-96		NM	7.4	65	995	130	348	960	7.1	120	30	47	6.4	<10	360	73	45	55	0.26	0.48	630	<6		

NM = Not measured
NS = Not sampled

LAW/CRANDALL, INC.

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JOB 70111-2-0346 DATE 12/26/96 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C
4928A	23-Feb-96	0.54	5.2	<0.5	<0.5	<0.5	<0.1			<0.001	<0.01	0.045	2.80		0.060	0.027	<0.04		1.5	B&C
4928A	23-Aug-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	11-Sep-96	NS	NS	NS	NS	NS	NS			NS	NS	NS	NS		NS	NS	NS		NS	
4928A	31-Oct-96	0.56	6.3	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	0.15		<0.01	<0.05	<0.04		0.32	B&C

NM = Not measured
NS = Not sampled

LAW/CRANDALL, INC.

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JOB 70111-2-0346 DATE 12/26/96 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	58	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	8.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-88		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.83	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.8	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.8	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	8.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.8	350	48	18	2.4	0.19	0.40	410	8.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.8	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	198	410	8.1	26	19	34	4.7	<0.8	230	24	19	<0.2		0.28	190	<8		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	62	22	32	5.0	<0.8	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.38	400	<8		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	8.0	<0.8	430	48	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	800			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	8.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	28	30	<0.2	0.15	810	<6		
4928B	23-Feb-96		526.60	7.2	75	820	35	546	1400	6.8	190	54	52	8.5	<10	690	78	77	5.7	0.53	1.1	880	32.0		
4928B	23-Aug-96		525.61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4928B	11-Sep-96		NM	7.0	71	1000	NA	595	11	6.9	180	43	46	6.1	<0.6	630	50	44	27	0.31	0.42	760			

NM = Not measured
NS = Not sampled

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JOB 70111-2-0346 DATE 12/26/96 F.T. _____ DR. _____ O.E. SCB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C
4928B	23-Feb-96	1.3	2.6	<0.5	<0.5	<0.5	0.11			<0.001	<0.01	<0.02	24		0.98	0.0076	<0.04		2.3	B&C
4928B	23-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4928B	11-Sep-96	1.4	5.6	<0.5	<0.5	<0.5	<0.1			<0.01	<0.01	<0.02	<0.4		0.64	<0.05	<0.04		0.26	B&C

NM = Not measured
NS = Not sampled

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APPENDIX B

GROUNDWATER CONTOUR MAPS

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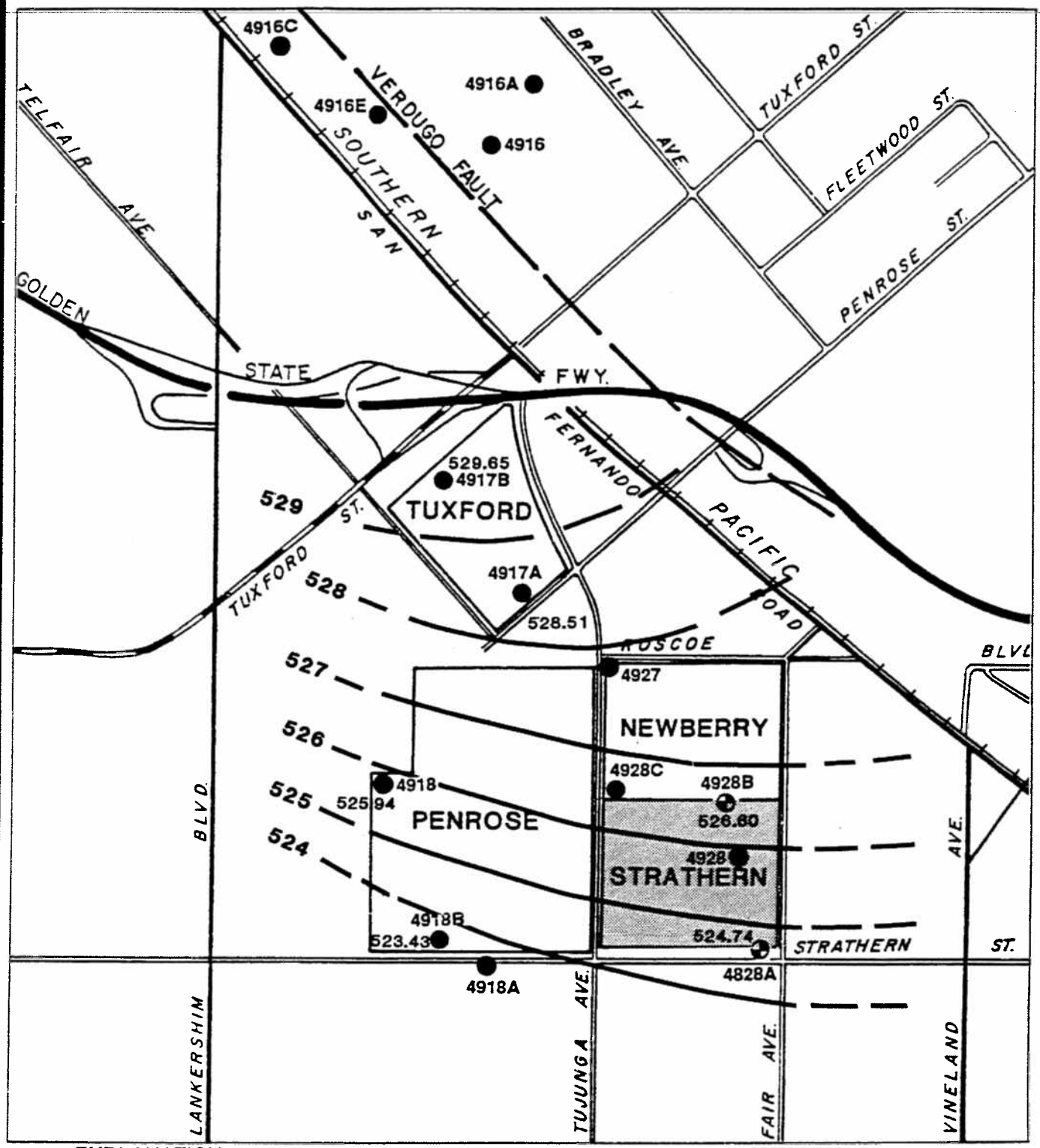

EXPLANATION:

- 4928B — MONITORING WELL LOCATION AND NUMBER
- 4927 — OTHER NEARBY MONITORING WELL
- 525.94 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

FEBRUARY 1996

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

JOB 2702.20346.0001 DATE 3-28-96 F.T. ____ DR. MN/NH O.E. ____ CHKD ____

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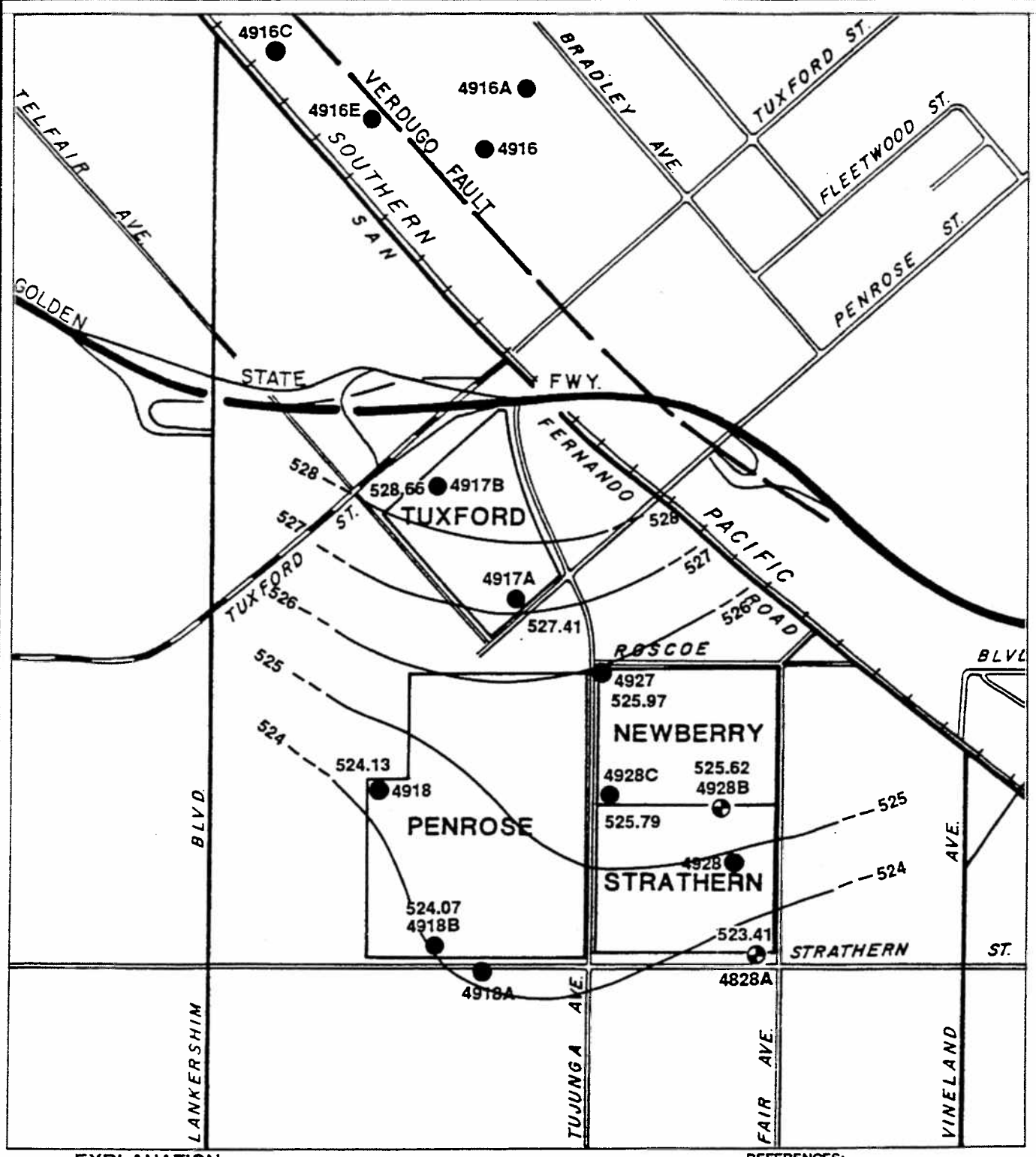

JOB 70111-2-0346-0001 DATE 9/26/96 F.T. DR. JM O.E. SLB CHKD

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 523.41 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000
SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST, 1996

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

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APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

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Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain-of-Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and

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time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX D

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G96-02-529

Received: 23 FEB 96

Mailed: MAR 13 1996

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-529-1	4928A	23 FEB 96
02-529-2	4928B	23 FEB 96

PARAMETER	02-529-1	02-529-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	380	690
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	380	690
Calcium (6010), mg/L	120	190
Magnesium (6010), mg/L	30	54
Chloride (300.0), mg/L	53	77
Copper (6010), mg/L	0.045	<0.02
Surfactants, MBAS (425.1), mg/L	0.12	0.15
Iron (6010), mg/L	2.8	24
Manganese (6010), mg/L	0.060	0.98
pH (150.1), Units	6.8	6.8
Potassium (6010), mg/L	5.9	6.5
Sodium (6010), mg/L	48	52
Sulfate (300.0), mg/L	75	78
Conductivity (120.1), umhos/cm	1100	1400
Dissolved Solids (160.1), mg/L	660	880
Zinc (6010), mg/L	1.5	2.3
Ion Balance (CALC), Percent	3.88	4.44
Nitrate (300.0), mg/L	57	5.7
Nitrite (300.0), mg/L	<5	<5
Digestion (3010), Date	03/01/96	03/01/96
Aluminum (6010), mg/L	<0.1	0.11
Fluoride (300.0), mg/L	0.45	1.1
COD (410.4), mg/L	<6	32
Boron (6010), mg/L	0.32	0.53

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LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-529-1	4928A	23 FEB 96
02-529-2	4928B	23 FEB 96

PARAMETER	02-529-1	02-529-2
Cadmium (7131), mg/L	<0.001	<0.001
Chromium (6010), mg/L	<0.01	<0.01
Lead (7421), mg/L	0.027	0.0076
Nickel (6010), mg/L	<0.04	<0.04
Furnace Digestion (3020), Date	03/01/96	03/01/96

CONFIDENTIAL

LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-529-1	4928A	23 FEB 96
02-529-2	4928B	23 FEB 96

PARAMETER	02-529-1	02-529-2
E524.2/VOC (524.2)		
Date Analyzed	03/05/96	03/05/96
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	1.9	3.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,1-Dichloropropene, ug/L	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1	<1
1,2-Dibromoethane, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	2.3
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichloropropane, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2,2-Dichloropropane, ug/L	<0.5	<0.5
2-Chlorotoluene, ug/L	<0.5	<0.5
4-Chlorotoluene, ug/L	<0.5	<0.5

CONFIDENTIAL

LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-529-1	4928A	23 FEB 96
02-529-2	4928B	23 FEB 96

PARAMETER	02-529-1	02-529-2	
Bromobenzene, ug/L	<0.5	<0.5	
Bromochloromethane, ug/L	<0.5	<0.5	
Bromodichloromethane, ug/L	<0.5	<0.5	
Bromomethane, ug/L	<0.5	<0.5	
Benzene, ug/L	<0.5	<0.5	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.5	<0.5	
Carbon Tetrachloride, ug/L	<0.5	<0.5	
Chloroethane, ug/L	<0.5	<0.5	
Chloroform, ug/L	<0.5	<0.5	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.5	<0.5	
Dibromomethane, ug/L	<0.5	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	<0.5	
Ethylbenzene, ug/L	<0.5	<0.5	
Freon 113, ug/L	<0.5	<0.5	
Hexachlorobutadiene, ug/L	<0.5	<0.5	
Isopropylbenzene, ug/L	<0.5	<0.5	
Methylene chloride, ug/L	<1	<1	
N-Butylbenzene, ug/L	<0.5	<0.5	
N-Propylbenzene, ug/L	<0.5	<0.5	
Naphthalene, ug/L	<1	<1	
Styrene, ug/L	<0.5	<0.5	
Trichloroethene, ug/L	0.54	1.3	
Trichlorofluoromethane, ug/L	<0.5	<0.5	
Toluene, ug/L	<0.5	<0.5	

LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
02-529-1	4928A	23 FEB 96
02-529-2	4928B	23 FEB 96

PARAMETER	02-529-1	02-529-2
Tetrachloroethene, ug/L	5.2	2.6
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	0.7
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
m- and p-Xylene Isomers, ug/L	<1	<1
o-Xylene, ug/L	<0.5	<0.5
p-Isopropyl toluene, ug/L	<0.5	<0.5
sec-Butylbenzene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
tert-Butylbenzene, ug/L	<0.5	<0.5
Other E524.2/VOC (524.2)	---	---

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LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 96-02-529-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 23 FEB 96

Anions	mg/L	meq/L
Nitrate	57	0.92
Chloride	53	1.5
Sulfate	75	1.6
Bicarbonate (as HCO3)	460	7.6
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		11.6

Cations	mg/L	meq/L
Magnesium	30	2.5
Sodium	48	2.1
Potassium	5.9	0.15
Calcium	120	6
Total Millequivalents per Liter		10.8

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	380
Ca Hardness (as CaCO3)	300
Mg Hardness (as CaCO3)	120
Total Hardness	420
Iron	2.8
Manganese	0.060
Copper	0.045
Zinc	1.5
Surfactants, MBAS	0.12
Dissolved Solids	660
Sp. Conductance, umhos/cm	1100
pH, units	6.8
Ion balance in percent	3.88

* Conforms to Title 22, California Administrative Code

003950

B C Analytical

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LOG NO: G96-02-529

Received: 23 FEB 96

Ms. Moira Feary
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 96-02-529-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 23 FEB 96

Anions	mg/L	meq/L
Nitrate	5.7	0.092
Chloride	77	2.2
Sulfate	78	1.6
Bicarbonate (as HCO3)	840	14
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		17.9

Cations	mg/L	meq/L
Magnesium	54	4.4
Sodium	52	2.3
Potassium	6.5	0.17
Calcium	190	9.5
Total Millequivalents per Liter		16.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	690
Ca Hardness (as CaCO3)	470
Mg Hardness (as CaCO3)	220
Total Hardness	690
Iron	24
Manganese	0.98
Copper	<0.02
Zinc	2.3
Surfactants, MBAS	0.15
Dissolved Solids	880
Sp. Conductance, umhos/cm	1400
pH, units	6.8
Ion balance in percent	4.44

* Conforms to Title 22, California Administrative Code

Linda Geddes FOR DS
Dick Swenson, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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003951

CHAIN OF CUSTODY RECORD

BCA Log Number G96-02-529

Client name: LAW/CRANDALL	Project or PO#: 70111-2-0346
Address: 200 Citadel DR.	Phone #: 213-889-5300
City, State, Zip: Los Angeles CA 90040	Report attention: Moira Fearey
Sampled by: K.V.S.	

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: Gen. Min.	Boron	524.2	Cd, Cr, Ni, Pb	COD	Hazardous sample / Special handling required	Remarks
	2/23/96	9:30	GW	4928A	9	✓	✓	✓	✓	✓		
	2/23/96	11:00	GW	4928B	9	✓	✓	✓	✓	✓		

	Signature	Print Name	Company	Date	Time
Relinquished by	Kathy Sommers	Kathy Sommers	LAW/CRANDALL	2/23/96	2:30
Received by	Sharon Malone	Sharon Malone	BCA	2/23/96	14:30
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BC ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

000352

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B C Analytical

ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-09-199

Received: 11 SEP 96

Mailed: SEP 25 1996

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-199-1	4928B	11 SEP 96

PARAMETER	09-199-1
Alkalinity (310.1)	
Carbonate Alk (as CaCO3), mg/L	<10
Bicarbonate Alk (as CaCO3), mg/L	520
Hydroxide Alk (as CaCO3), mg/L	<10
Total Alkalinity (as CaCO3), mg/L	520
Calcium (6010), mg/L	160
Magnesium (6010), mg/L	43
Chloride (300.0), mg/L	44
Copper (6010), mg/L	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1
Iron (6010), mg/L	<0.04
Manganese (6010), mg/L	0.64
pH (150.1), Units	6.9
Potassium (6010), mg/L	6.1
Sodium (6010), mg/L	46
Sulfate (300.0), mg/L	50
Conductivity (120.1), umhos/cm	1100
Dissolved Solids (160.1), mg/L	760
Zinc (6010), mg/L	0.26
Ion Balance (CALC), Percent	3.9
Nitrate (300.0), mg/L	27
Nitrite (300.0), mg/L	<5
Digestion (3005), Date	09/17/96
Aluminum (6010), mg/L	<0.1
Fluoride (300.0), mg/L	0.42
Boron (6010), mg/L	0.31
Cadmium (6010), mg/L	<0.01
Chromium (6010), mg/L	<0.01

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-09-199

Received: 11 SEP 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-199-1	4928B	11 SEP 96

PARAMETER	09-199-1
Lead (6010), mg/L	<0.05
Nickel (6010), mg/L	<0.04
Date Filtered	09/17/96

BCA

B C Analytical

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Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-199-1	4928B	11 SEP 96

PARAMETER	09-199-1
E524.2/VOC (524.2)	
Date Analyzed	09/12/96
Date Extracted	09/12/96
Dilution Factor, Times	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5
1,1,1-Trichloroethane, ug/L	0.52
1,1,2,2-Tetrachloroethane, ug/L	<0.5
1,1,2-Trichloroethane, ug/L	<0.5
1,1-Dichloroethane, ug/L	4.4
1,1-Dichloroethene, ug/L	<0.5
1,1-Dichloropropene, ug/L	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5
1,2,3-Trichloropropane, ug/L	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1
1,2-Dibromoethane, ug/L	<0.5
1,2-Dichloroethane, ug/L	<0.5
1,2-Dichlorobenzene, ug/L	1.2
1,2-Dichloropropane, ug/L	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5
1,3-Dichlorobenzene, ug/L	<0.5
1,3-Dichloropropane, ug/L	<0.5
1,4-Dichlorobenzene, ug/L	<0.5
2,2-Dichloropropane, ug/L	<0.5
2-Chlorotoluene, ug/L	<0.5
4-Chlorotoluene, ug/L	<0.5

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-09-199

Received: 11 SEP 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-199-1	4928B	11 SEP 96

PARAMETER	09-199-1		
Bromobenzene, ug/L	<0.5		
Bromochloromethane, ug/L	<0.5		
Bromodichloromethane, ug/L	<0.5		
Bromomethane, ug/L	<0.5		
Benzene, ug/L	<0.5		
Bromoform, ug/L	<0.5		
Chlorobenzene, ug/L	<0.5		
Carbon Tetrachloride, ug/L	<0.5		
Chloroethane, ug/L	<0.5		
Chloroform, ug/L	<0.5		
Chloromethane, ug/L	<0.5		
Dibromochloromethane, ug/L	<0.5		
Dibromomethane, ug/L	<0.5		
Dichlorodifluoromethane, ug/L	3.9		
Ethylbenzene, ug/L	<0.5		
Freon 113, ug/L	<0.5		
Hexachlorobutadiene, ug/L	<0.5		
Isopropylbenzene, ug/L	<0.5		
Methylene chloride, ug/L	1.6		
N-Butylbenzene, ug/L	<0.5		
N-Propylbenzene, ug/L	<0.5		
Naphthalene, ug/L	<1		
Styrene, ug/L	<0.5		
Trichloroethene, ug/L	1.4		
Trichlorofluoromethane, ug/L	0.60		
Toluene, ug/L	<0.5		
Tetrachloroethene, ug/L	5.6		

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-09-199

Received: 11 SEP 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-199-1	4928B	11 SEP 96

PARAMETER	09-199-1
Vinyl chloride, ug/L	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5
m- and p-Xylene Isomers, ug/L	<1
o-Xylene, ug/L	<0.5
p-Isopropyl toluene, ug/L	<0.5
sec-Butylbenzene, ug/L	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5
tert-Butylbenzene, ug/L	<0.5
Surrogates **	
1,2-Dichlorobenzene-d4 Rep., ug/L	3.96
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00
4-Bromofluorobenzene Rep., ug/L	4.91
4-Bromofluorobenzene Theo., ug/L	5.00

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-09-199

Received: 11 SEP 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

R. Yaghoubi For GG

Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specifi compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar locatio

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B C Analytical

801 Western Avenue
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LOG NO: G96-09-199

Received: 11 SEP 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 96-09-199-1
Sample Description: 4928B

General Mineral Analysis
Sampled Date 11 SEP 96

Anions	mg/L	meq/L
Nitrate	27	0.44
Chloride	44	1.2
Sulfate	50	1
Bicarbonate (as HCO3)	630	10
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		12.6

Cations	mg/L	meq/L
Magnesium	43	3.5
Sodium	46	2
Potassium	6.1	0.16
Calcium	160	8
Total Millequivalents per Liter		13.7

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	520
Ca Hardness (as CaCO3)	400
Mg Hardness (as CaCO3)	180
Total Hardness	580
Iron	<0.04
Manganese	0.64
Copper	<0.02
Zinc	0.26
Surfactants, MBAS	<0.1
Dissolved Solids	760
Sp. Conductance, umhos/cm	1100
pH, units	6.9
Ion balance in percent	3.87

* Conforms to Title 22, California Administrative Code

R. Yaghoubi For GG
Greta Galoustian, Laboratory Director

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BCA

003959

CHAIN OF CUSTODY RECORD

BCA Log Number 9604194

Client name: LAW/CRANDALL	Project or PO#: 70111-2-0346
Address: 200 Citadel DR.	Phone #: 213-889-5300
City, State, Zip: Los Angeles CA 90040	Report attention: Sandy Britt

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: KVF / Sample description	Number of containers	Analyses required: Gen. Min.	Cd, Cr, Ni, Pb	Boron	524.2	Hazardous sample / Special handling required	Remarks
	9/11/96	09:00	GW	4928B	7	✓	✓	✓	✓		metals needs to be filtered, then preserved

	Signature	Print Name	Company	Date	Time
Relinquished by	Kathy Foley	KATHY Foley	LAW/CRANDALL	9/11/96	10:50
Received by	Susan Arrowsmith	SARROWSMITH	BCA	9/11/96	10:50
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glandala, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Patrolaum WW—Wastewater

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00300

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LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Chromium (6010), mg/L	<0.01
Lead (6010), mg/L	<0.05
Nickel (6010), mg/L	<0.04
Date Filtered	FILT

003962

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801 Western Avenue, Glendale, CA 91201 • Phone: (818) 247-5737 • Fax: (818) 247-9797

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LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
E524.2/VOC (524.2)	
Date Analyzed	11/05/96
Date Extracted	11/05/96
Dilution Factor, Times	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5
1,1,1-Trichloroethane, ug/L	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5
1,1,2-Trichloroethane, ug/L	<0.5
1,1-Dichloroethane, ug/L	2.2
1,1-Dichloroethene, ug/L	<0.5
1,1-Dichloropropene, ug/L	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5
1,2,3-Trichloropropane, ug/L	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1
1,2-Dibromoethane, ug/L	<0.5
1,2-Dichloroethane, ug/L	<0.5
1,2-Dichlorobenzene, ug/L	<0.5
1,2-Dichloropropane, ug/L	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5
1,3-Dichlorobenzene, ug/L	<0.5
1,3-Dichloropropane, ug/L	<0.5
1,4-Dichlorobenzene, ug/L	<0.5
2,2-Dichloropropane, ug/L	<0.5
2-Chlorotoluene, ug/L	<0.5
4-Chlorotoluene, ug/L	<0.5

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LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Bromobenzene, ug/L	<0.5
Bromochloromethane, ug/L	<0.5
Bromodichloromethane, ug/L	<0.5
Bromomethane, ug/L	<0.5
Benzene, ug/L	<0.5
Bromoform, ug/L	<0.5
Chlorobenzene, ug/L	<0.5
Carbon Tetrachloride, ug/L	<0.5
Chloroethane, ug/L	<0.5
Chloroform, ug/L	<0.5
Chloromethane, ug/L	<0.5
Dibromochloromethane, ug/L	<0.5
Dibromomethane, ug/L	<0.5
Dichlorodifluoromethane, ug/L	1.3
Ethylbenzene, ug/L	<0.5
Freon 113, ug/L	<0.5
Hexachlorobutadiene, ug/L	<0.5
Isopropylbenzene, ug/L	<0.5
Methylene chloride, ug/L	<1
N-Butylbenzene, ug/L	<0.5
N-Propylbenzene, ug/L	<0.5
Naphthalene, ug/L	<1
Styrene, ug/L	<0.5
Trichloroethene, ug/L	0.56
Trichlorofluoromethane, ug/L	<0.5
Toluene, ug/L	<0.5
Tetrachloroethene, ug/L	6.3

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LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Vinyl chloride, ug/L	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5
m- and p-Xylene Isomers, ug/L	<1
o-Xylene, ug/L	<0.5
p-Isopropyl toluene, ug/L	<0.5
sec-Butylbenzene, ug/L	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5
tert-Butylbenzene, ug/L	<0.5
Surrogates **	
1,2-Dichlorobenzene-d4 Rep., ug/L	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00
4-Bromofluorobenzene Rep., ug/L	5.17
4-Bromofluorobenzene Theo., ug/L	5.00

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LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-2	4928B	31 OCT 96

PARAMETER	10-733-2
Sample Held, Not Analyzed	HOLD

Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the speci compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar locat

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ANALYTICAL REPORT

LOG NO: G96-10-733

Received: 31 OCT 96

Mailed:

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

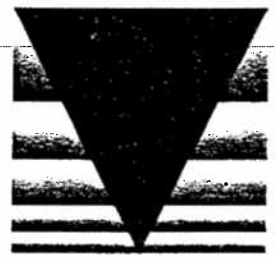
Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
COD (410.4), mg/L	<6
Boron (6010), mg/L	0.26
Cadmium (6010), mg/L	<0.01
Chromium (6010), mg/L	<0.01
Lead (6010), mg/L	<0.05
Nickel (6010), mg/L	<0.04
Date Filtered	FILT

BCA—Division of V.O.C. Analytical Laboratories, Inc.
801 Western Avenue, Glendale, CA 91201 • Phone: (818) 247-5737 • Fax: (818) 247-9797



Our Quality Control Is Your Quality Assurance

LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
E524.2/VOC (524.2)	
Date Analyzed	11/05/96
Date Extracted	11/05/96
Dilution Factor, Times	1
1,1,1,2-Tetrachloroethane, ug/L	<0.5
1,1,1-Trichloroethane, ug/L	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5
1,1,2-Trichloroethane, ug/L	<0.5
1,1-Dichloroethane, ug/L	2.2
1,1-Dichloroethene, ug/L	<0.5
1,1-Dichloropropene, ug/L	<0.5
1,2,3-Trichlorobenzene, ug/L	<0.5
1,2,3-Trichloropropane, ug/L	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.5
1,2,4-Trimethylbenzene, ug/L	<0.5
1,2-Dibromo-3-chloropropane, ug/L	<1
1,2-Dibromoethane, ug/L	<0.5
1,2-Dichloroethane, ug/L	<0.5
1,2-Dichlorobenzene, ug/L	<0.5
1,2-Dichloropropane, ug/L	<0.5
1,3,5-Trimethylbenzene, ug/L	<0.5
1,3-Dichlorobenzene, ug/L	<0.5
1,3-Dichloropropane, ug/L	<0.5
1,4-Dichlorobenzene, ug/L	<0.5
2,2-Dichloropropane, ug/L	<0.5
2-Chlorotoluene, ug/L	<0.5
4-Chlorotoluene, ug/L	<0.5

Our Quality Control Is Your Quality Assurance

LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

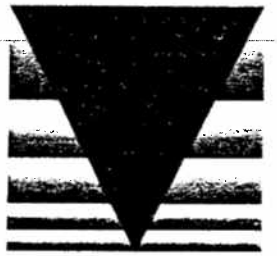
Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Bromobenzene, ug/L	<0.5
Bromochloromethane, ug/L	<0.5
Bromodichloromethane, ug/L	<0.5
Bromomethane, ug/L	<0.5
Benzene, ug/L	<0.5
Bromoform, ug/L	<0.5
Chlorobenzene, ug/L	<0.5
Carbon Tetrachloride, ug/L	<0.5
Chloroethane, ug/L	<0.5
Chloroform, ug/L	<0.5
Chloromethane, ug/L	<0.5
Dibromochloromethane, ug/L	<0.5
Dibromomethane, ug/L	<0.5
Dichlorodifluoromethane, ug/L	1.3
Ethylbenzene, ug/L	<0.5
Freon 113, ug/L	<0.5
Hexachlorobutadiene, ug/L	<0.5
Isopropylbenzene, ug/L	<0.5
Methylene chloride, ug/L	<1
N-Butylbenzene, ug/L	<0.5
N-Propylbenzene, ug/L	<0.5
Naphthalene, ug/L	<1
Styrene, ug/L	<0.5
Trichloroethene, ug/L	0.56
Trichlorofluoromethane, ug/L	<0.5
Toluene, ug/L	<0.5
Tetrachloroethene, ug/L	6.3

003969



Our Quality Control Is Your Quality Assurance

LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
10-733-1	4928A	31 OCT 96

PARAMETER	10-733-1
Vinyl chloride, ug/L	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5
m- and p-Xylene Isomers, ug/L	<1
o-Xylene, ug/L	<0.5
p-Isopropyl toluene, ug/L	<0.5
sec-Butylbenzene, ug/L	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5
tert-Butylbenzene, ug/L	<0.5
Surrogates **	
1,2-Dichlorobenzene-d4 Rep., ug/L	3.94
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00
4-Bromofluorobenzene Rep., ug/L	5.17
4-Bromofluorobenzene Theo., ug/L	5.00

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Our Quality Control Is Your Quality Assurance

LOG NO: G96-10-733

Received: 31 OCT 96

Mr. Sandy Britt
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, CA 90040

Project: 70111-2-0346

REPORT OF ANALYTICAL RESULTS

Log Number : 96-10-733-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 31 OCT 96

Anions	mg/L	meq/L
Nitrate	55	0.89
Chloride	45	1.3
Sulfate	73	1.5
Bicarbonate (as HCO3)	440	7.2
Carbonate (as CO3)	0	0
Hydroxide (as OH)	0	0
Total Millequivalents per Liter		10.9

Cations	mg/L	meq/L
Magnesium	30	2.5
Sodium	47	2
Potassium	6.4	0.16
Calcium	120	6
Total Millequivalents per Liter		10.7

Determination	mg/L
Hydroxide Alk (as CaCO3)	<10
Carbonate Alk (as CaCO3)	<10
Bicarbonate Alk (as CaCO3	360
Ca Hardness (as CaCO3)	300
Mg Hardness (as CaCO3)	120
Total Hardness	420
Iron	0.15
Manganese	<0.01
Copper	<0.02
Zinc	0.32
Surfactants, MBAS	<0.1
Dissolved Solids	630
Sp. Conductance, umhos/cm	960
pH, units	7.1
Ion balance in percent	1.06

* Conforms to Title 22, California Administrative Code

Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the spec compounds and samples investigated and may not necessarily reflec other apparently similar material from the same or a similar loca

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CHAIN OF CUSTODY RECORD

BCA Log Number G96-10-733

Client name: LAW/Crandall

Project or PO#: 70111-2-0346

Address: 200 Citadel Dr.

Phone #: 213-589-5300

City, State, Zip: Los Angeles CA 90040

Report attention: Sandy Britt

Sampled by: KVF/ME

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gen Min	COD	Boron	524.1	Cd, Cr, Ni, Pb			Hazardous sample Special handling required	Remarks
	10/31/96	9:25	GW	4928A	8	✓	✓	✓	✓	✓				
	10/31/96	10:45	GW	4928B	8	✓	✓	✓	✓	✓				(Hold)
														Metals needs to be filtered, then preserved.

	Signature	Print Name	Company	Date	Time
Relinquished by	Kathy Foley	Kathy Foley	LAW/CRANDALL	10/31/96	12:20
Received by	Sharon Malone	Sharon Malone	VOC Analytical	10/31/96	1220
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

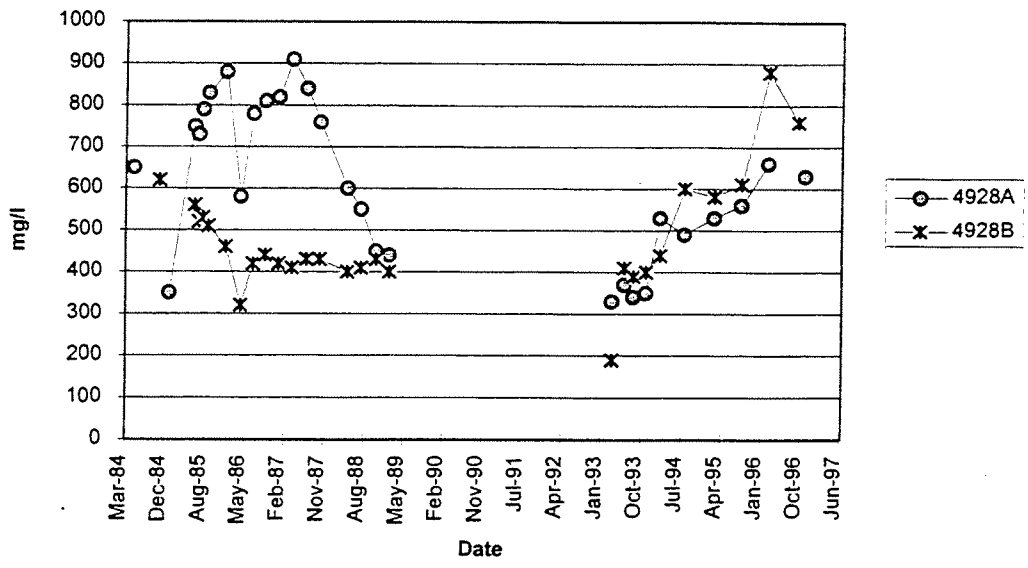
*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum WW—Wastewater

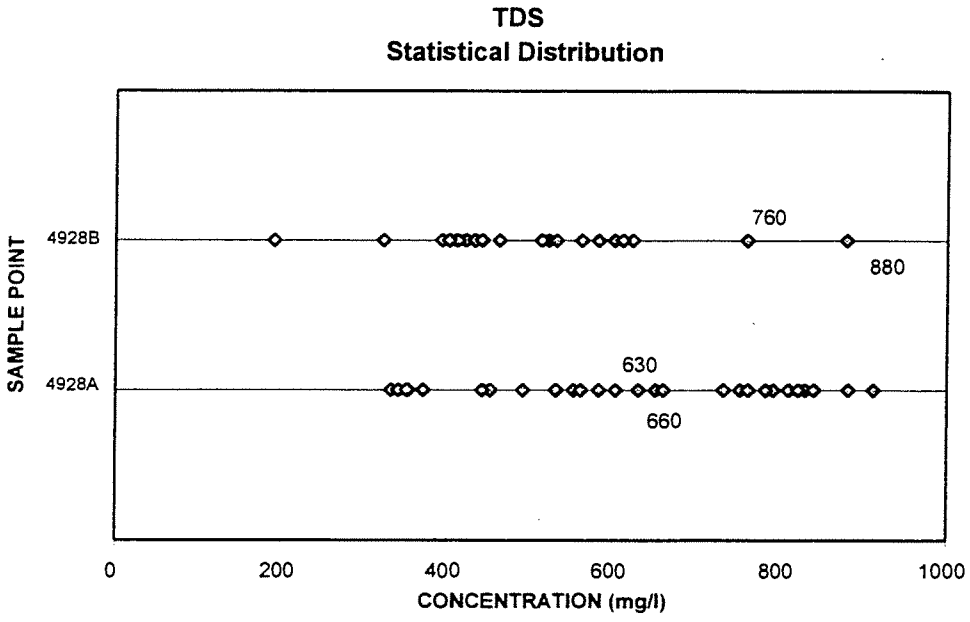
003972

APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

JOB 7011-2-03546 DATE 1-21-97 F.T. _____ DR. _____ O.E. SAS CHKD _____

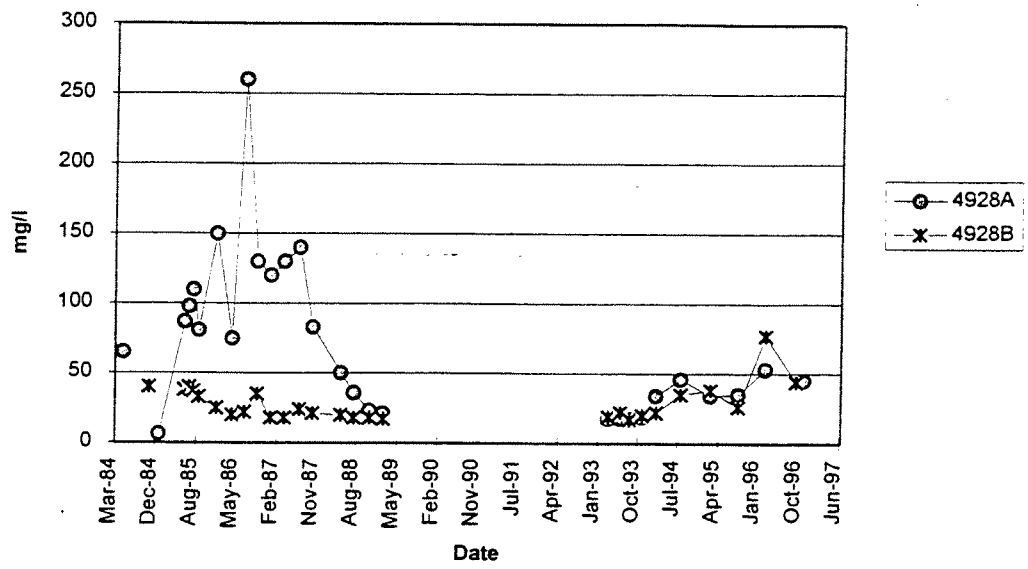


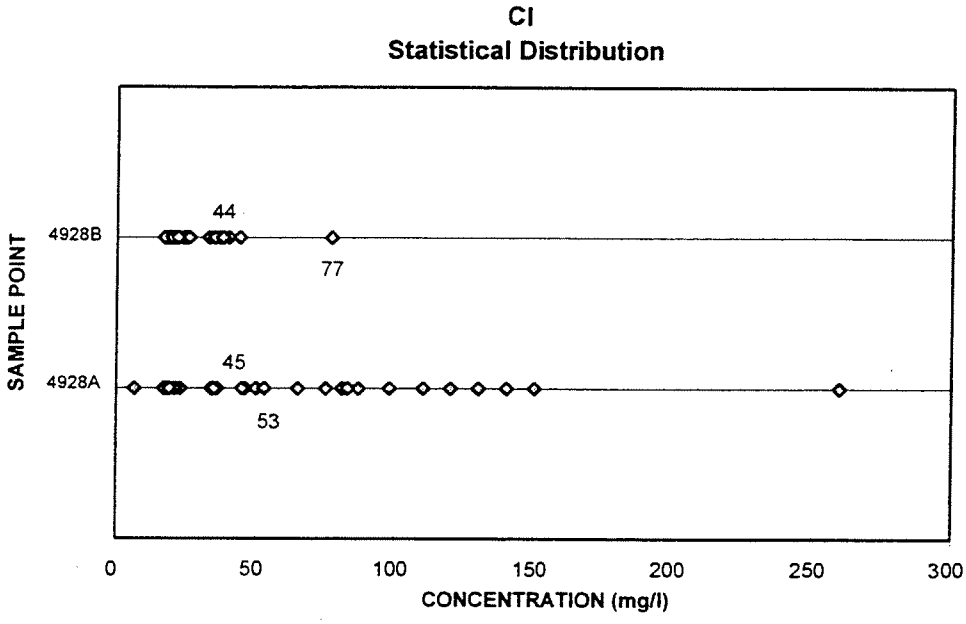


Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

JOB 7011-2-0316 DATE 1-21-97 F.T. _____ DR. _____ O.E. SCF CHKD _____

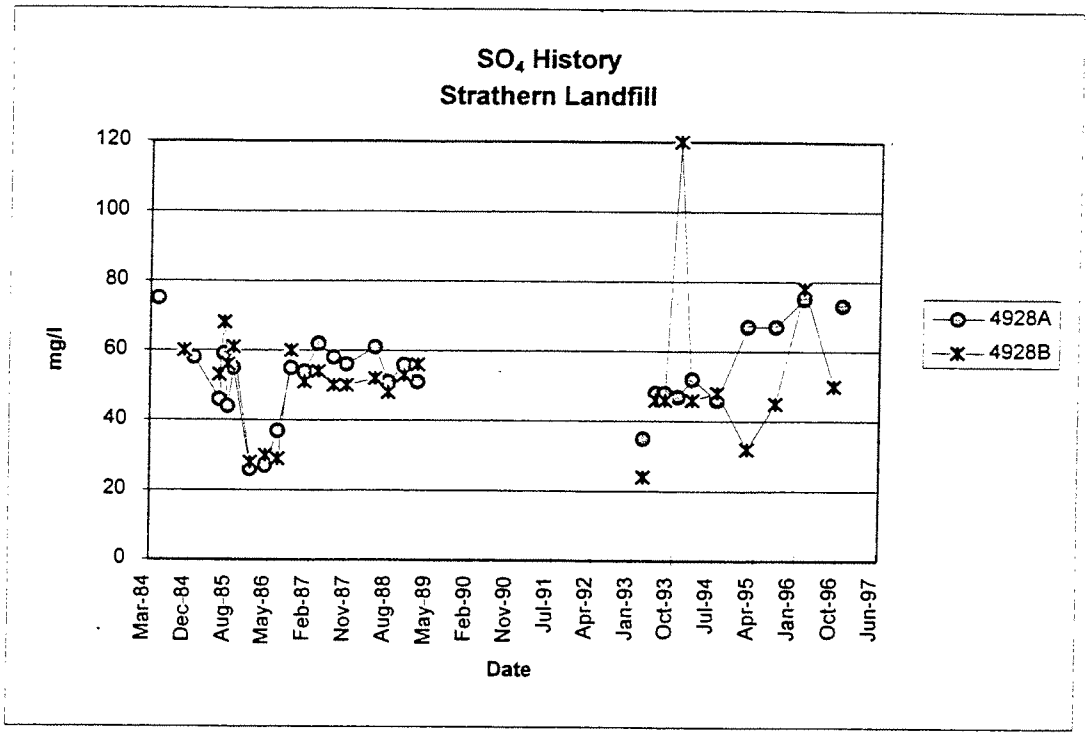


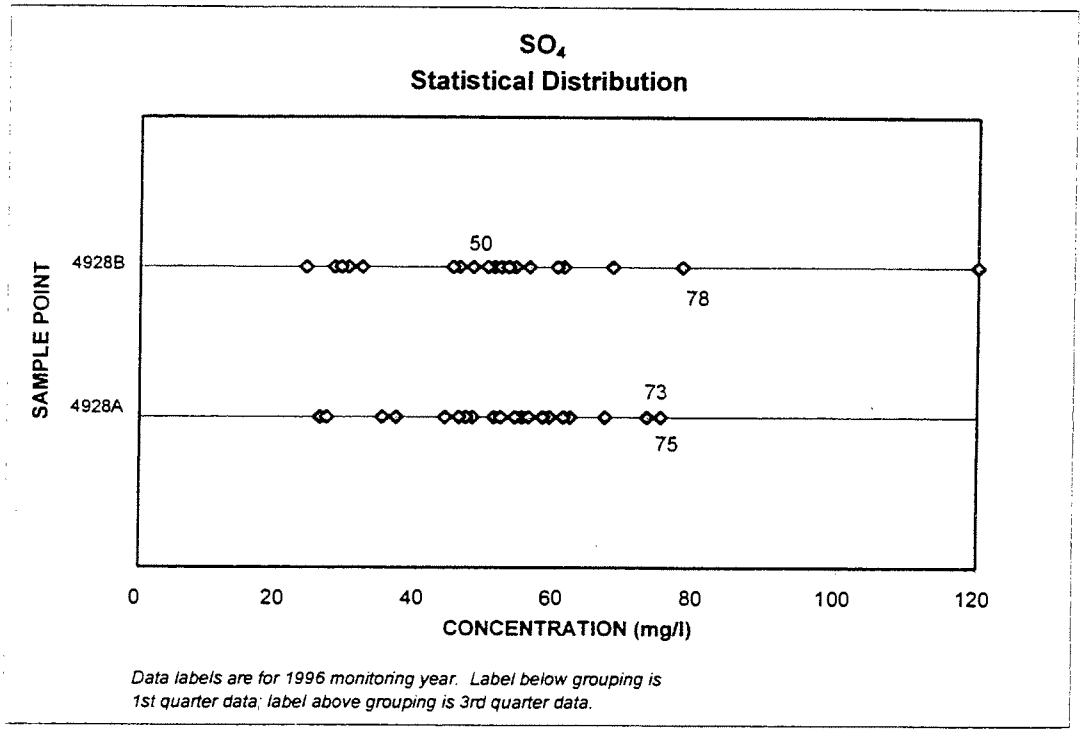


Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

JOB 7011-2-0346 DATE 1-21-97 F.T. _____ DR. _____ O.E. SLS CHKD _____

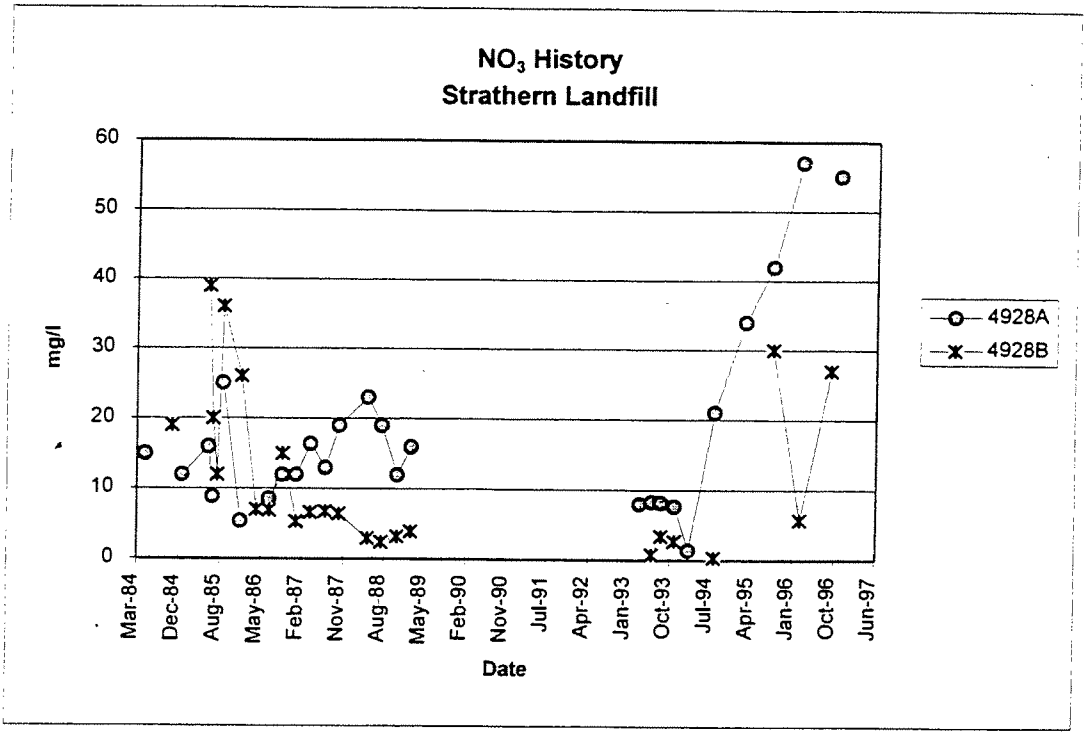


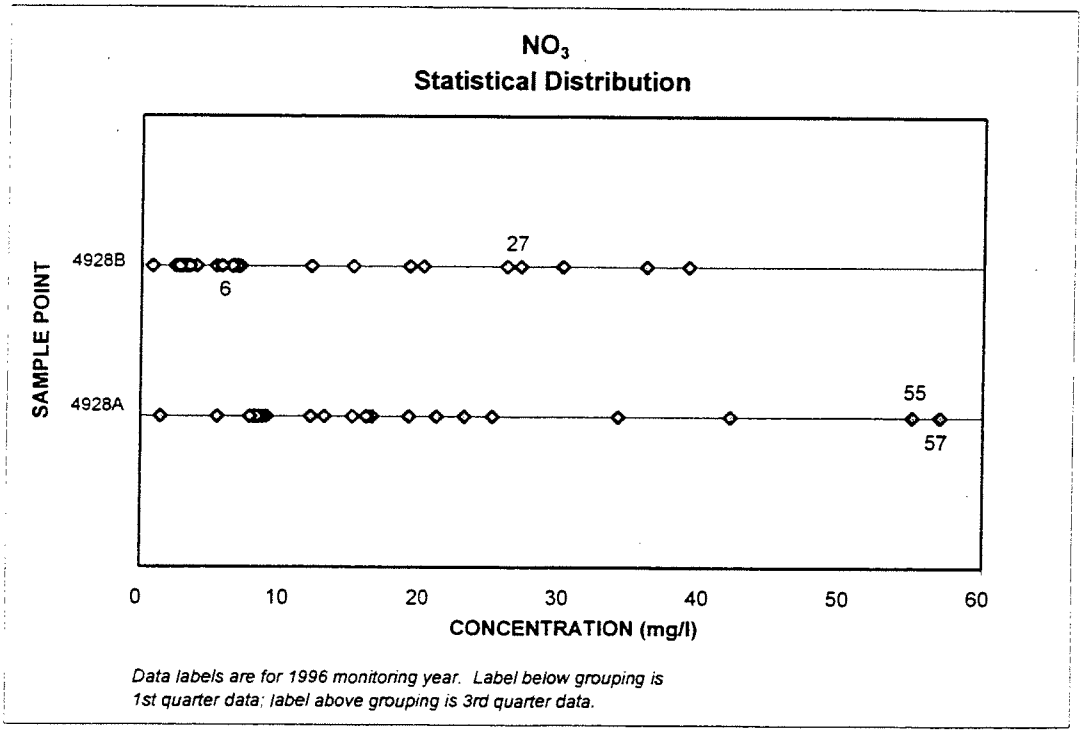


Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

JOB 7011-2-03246 DATE 1-21-97 F.T. _____ DR. _____ O.E. BLS CHKD _____



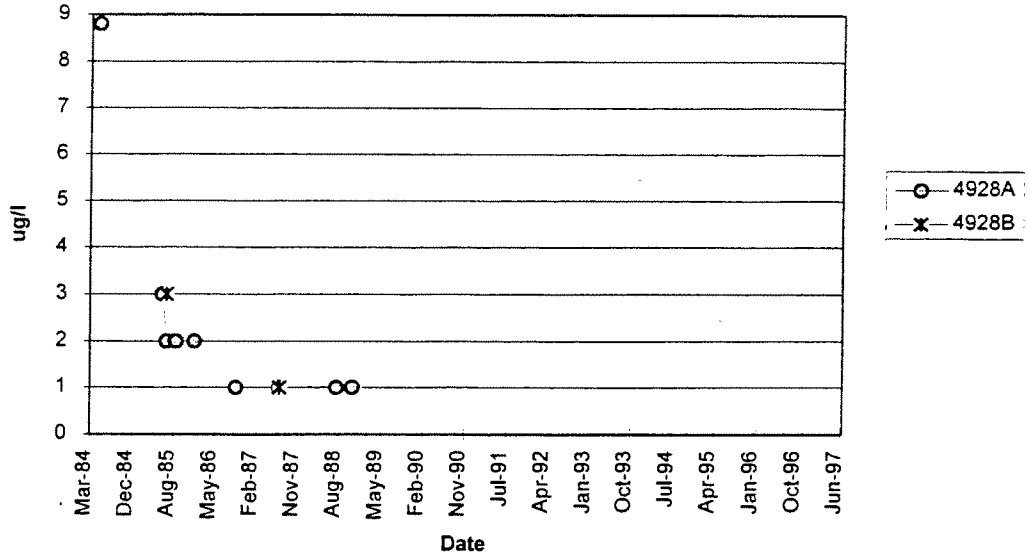


Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

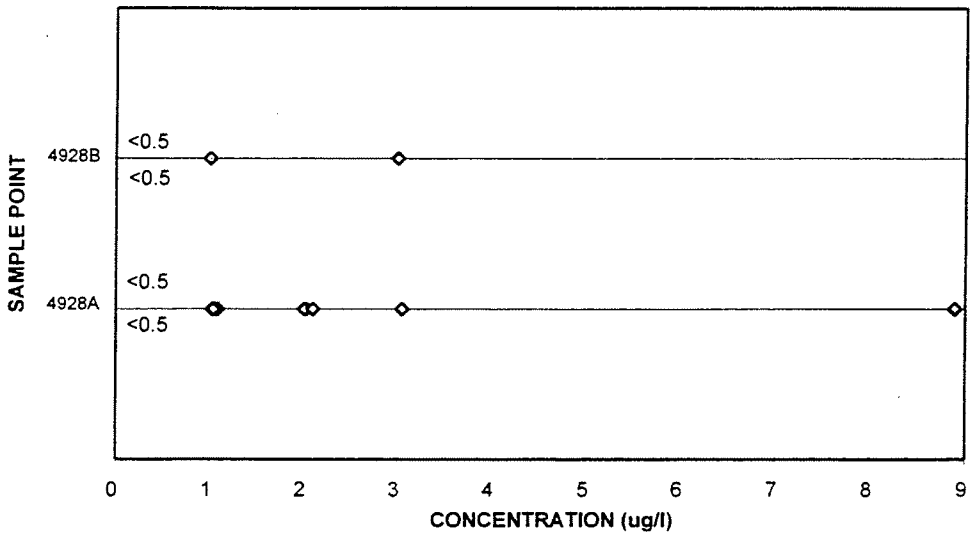
LAW/CRANDALL

JOB 70111-2-0346 DATE 1-21-97 F.T. _____ DR. _____ O.E. SCS CHKD _____

1,2-DCE History
Strathern Landfill



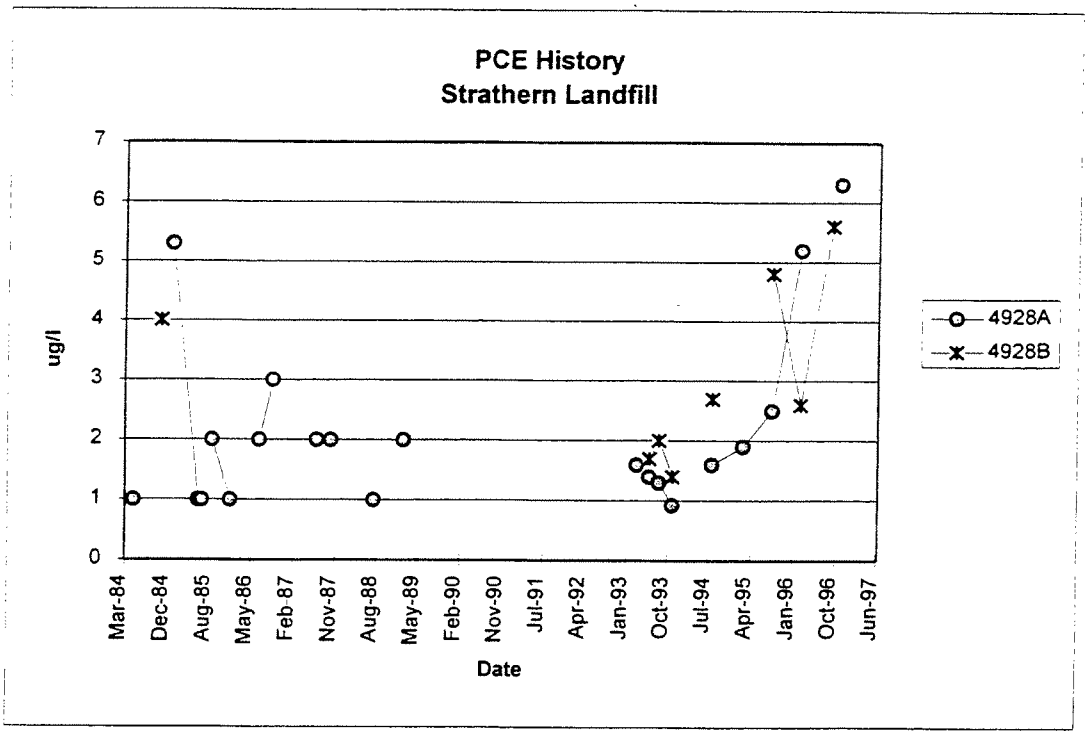
1,2-DCA
Statistical Distribution

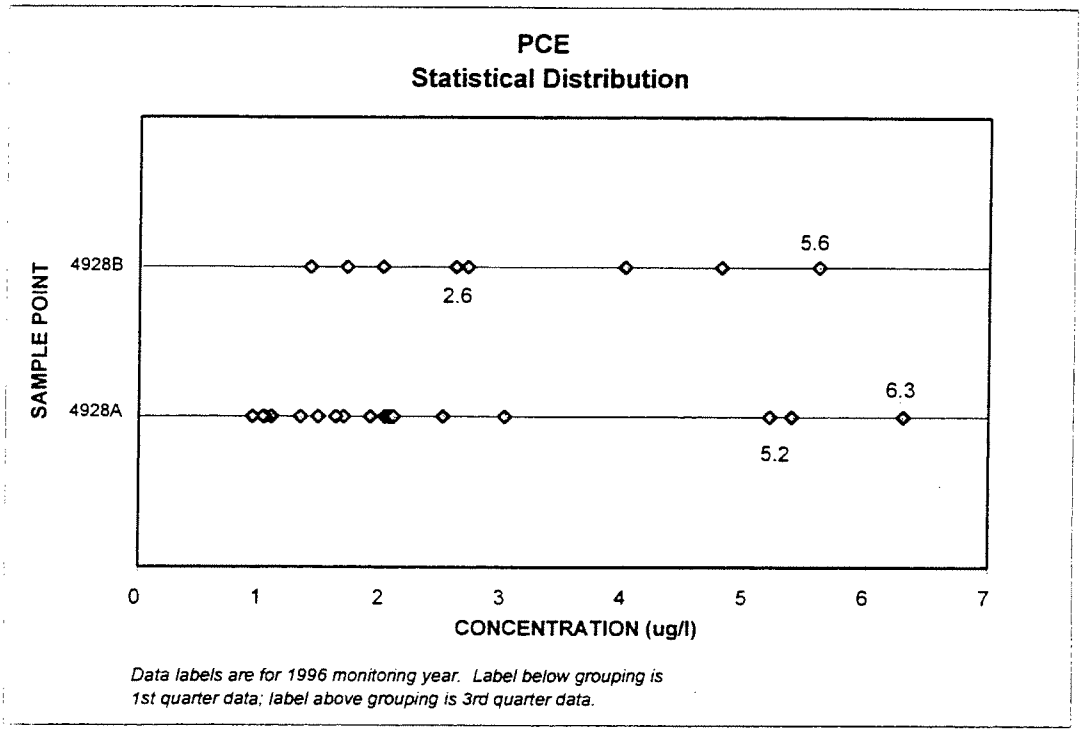


Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL

JOB 7011-2-0346 DATE 1-21-97 F.T. DR. O.E. SAS CHKD





Data labels are for 1996 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

LAW/CRANDALL, INC.

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

GROUNDWATER MONITORING REPORT

FIRST QUARTER 1995

STRATHERN LANDFILL

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared for

Los Angeles By-Products Company

April 18, 1995

Law/Crandall Project No. 2702.20346.0001

003980

CONFIDENTIAL

LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

April 18, 1995

Mr. Mike McAllister
Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **Groundwater Monitoring Report**
First Quarter 1995
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI No. 7055
Law/Crandall Project 2702.20346.0001

This report contains a summary of first quarter 1995 groundwater monitoring for Los Angeles By-Product Company's Strathern Landfill. Law/Crandall, Inc., monitors the levels and quality of groundwater at Strathern Landfill. Groundwater levels at the monitoring wells have declined since August 1994. Groundwater quality meets California Drinking Water Standards for the parameters measured, except for TDS, iron, manganese, zinc, and lead in well 4928A and TDS, iron, and manganese in well 4928B. Based on the laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

Scope and Limitations

Law/Crandall, Inc., measures groundwater levels, collects groundwater samples, analyzes laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under the provisions of the Waste Discharge Requirement (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall, Inc., prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

200 CITADEL DRIVE • LOS ANGELES, CA 90040
(213) 889-5300 • FAX (213) 721-6700

ONE OF THE LAW COMPANIES

Background

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

Site Description

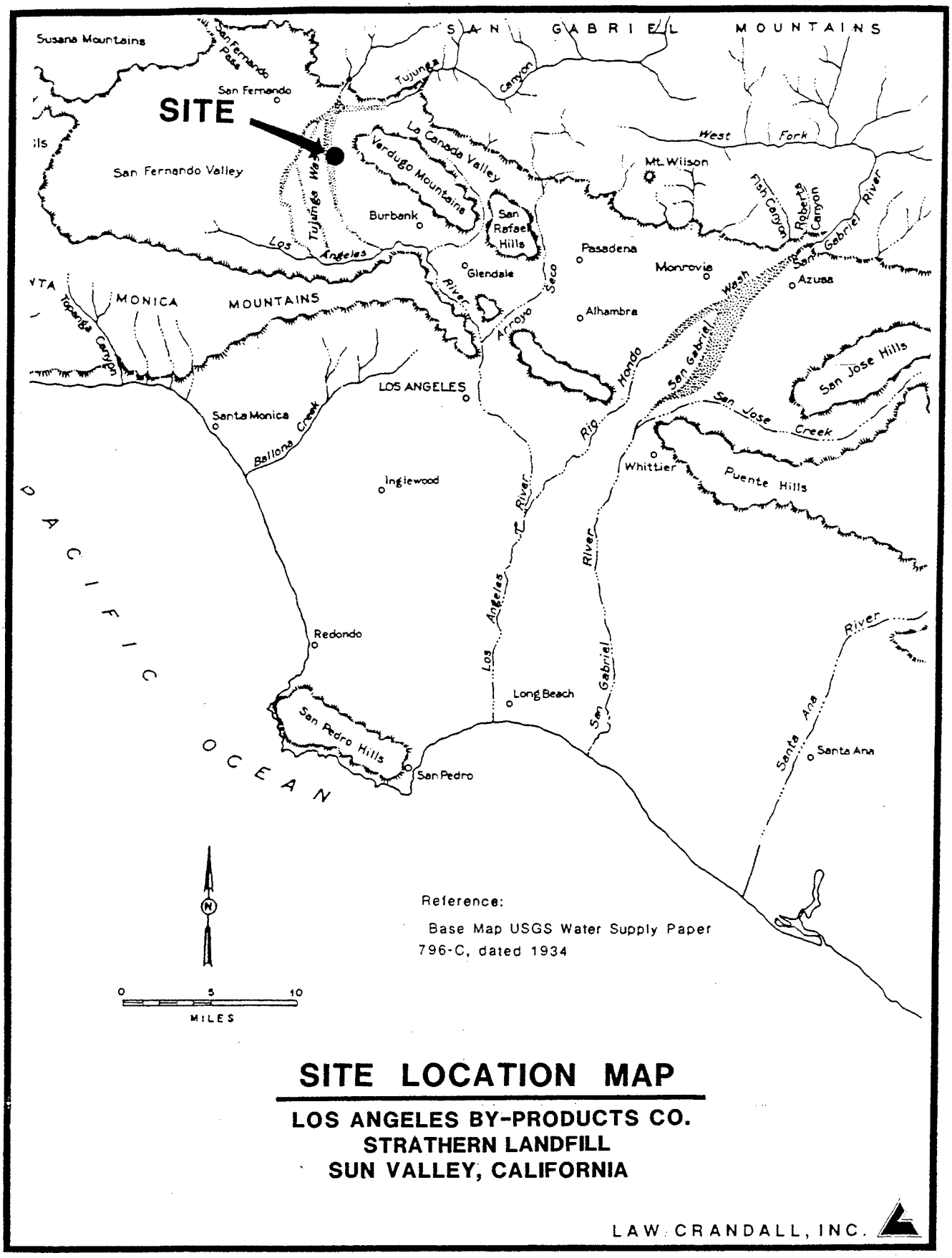
Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and broken asphalt. The site covers 34.7 acres and has a capacity of approximately 6,900,000 cubic yards. Strathern Landfill is located adjacent to Tuxford, Penrose, and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. The site is monitored to satisfy the requirements of Monitoring and Reporting Program (MRP) No. 7055, adopted by the RWQCB on July 22, 1991. The MRP requires quarterly reporting on groundwater quality. This monitoring report covers this requirement for the first quarter of 1995.

Law/Crandall, Inc., collected groundwater samples on February 20, 1995, and prepared this report. BC Analytical Laboratories analyzed the groundwater samples. All samples were analyzed at a laboratory certified for such analyses in accordance with Section 13176 of the California Water Code and current EPA 40 CFR, Part 261 Guidelines, or as specified in this Order. BC Analytical is certified for such analyses by the State Department of Health Services.

The Solid Waste Assessment Test (SWAT) Report was submitted to the RWQCB on July 1, 1989.



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

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Monitoring Well Network

The groundwater monitoring well network for the site consists of two wells. Figure 2 shows locations of monitoring wells. Table 1 presents monitoring well construction details.

TABLE 1

MONITORING WELL CONSTRUCTION DETAILS

WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

Results

This section presents the first quarter 1995 monitoring results, including groundwater levels and groundwater quality.

Groundwater Levels

Law/Crandall, Inc., measured groundwater levels during the first quarter of 1995. Groundwater levels increased since November 1994. The groundwater database in Attachment B contains the water level data. Figure 2 shows the groundwater levels and contours for the first quarter of 1995. Figure 3 shows hydrographs for both wells. Well 4928C shows unusually high water levels, probably caused by recharge through a gap in the Verdugo fault northeast of the site between Vineland Avenue and Penrose Street. This well commonly has an exaggerated response to recharge.

Groundwater Quality

We collected groundwater samples on February 20, 1995. Laboratory analyses indicate that the groundwater meets California Drinking Water Standards for the parameters measured, except for TDS, iron, manganese, zinc, and lead in well 4928A and TDS, iron, and manganese in well 4928B. Table 2 compares groundwater quality for the first quarter of 1995 with California Drinking Water Standards.

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TABLE 2

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
First Quarter 1995

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE	
		4928A	4928B
Inorganic	(ppm)		
Total Dissolved Solids (TDS)	500	530	580
Chloride (Cl)	250	34	38
Sulfate (SO_4)	250	67	32
Nitrate (NO_3)	45	7.6	<0.03
Iron (Fe)	0.3	7.8	2.4
Manganese (Mn)	0.05	0.17	0.22
Zinc (Zn)	5	5.2	4.8
Lead (Pb)	0.05	0.099	0.016
Organic	(ppb)		
Trichloroethylene (TCE)	5	<0.5	2.7
Tetrachloroethylene (PCE)	5	1.9	<0.5
1,2-dichloroethane (1,2-DCA)	0.5	<0.5	<0.5
1,1-dichloroethene (1,1-DCE)	6	<0.5	<0.5
1,2-dichlorobenzene (1,1-DCB)	600	<0.5	0.80
Carbon tetrachloride (CCl_4)	0.5	<0.5	<0.5
Trichlorofluoromethane	150	<0.5	<0.5

* Source: CCR, Title 22, Division 4, Chapter 15

Attachment A contains the groundwater sampling protocol. The groundwater database in Attachment B contains a summary of field and laboratory analyses. Attachment C contains the analytical results from BC Analytical Laboratories of groundwater samples collected in the first quarter of 1995. Attachment C also contains the chain-of-custody records.

Conclusions

Water levels have declined since August 1994. Based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall, Inc., will continue to monitor the site quarterly. There are no recommendations based on the first quarter 1995 data.

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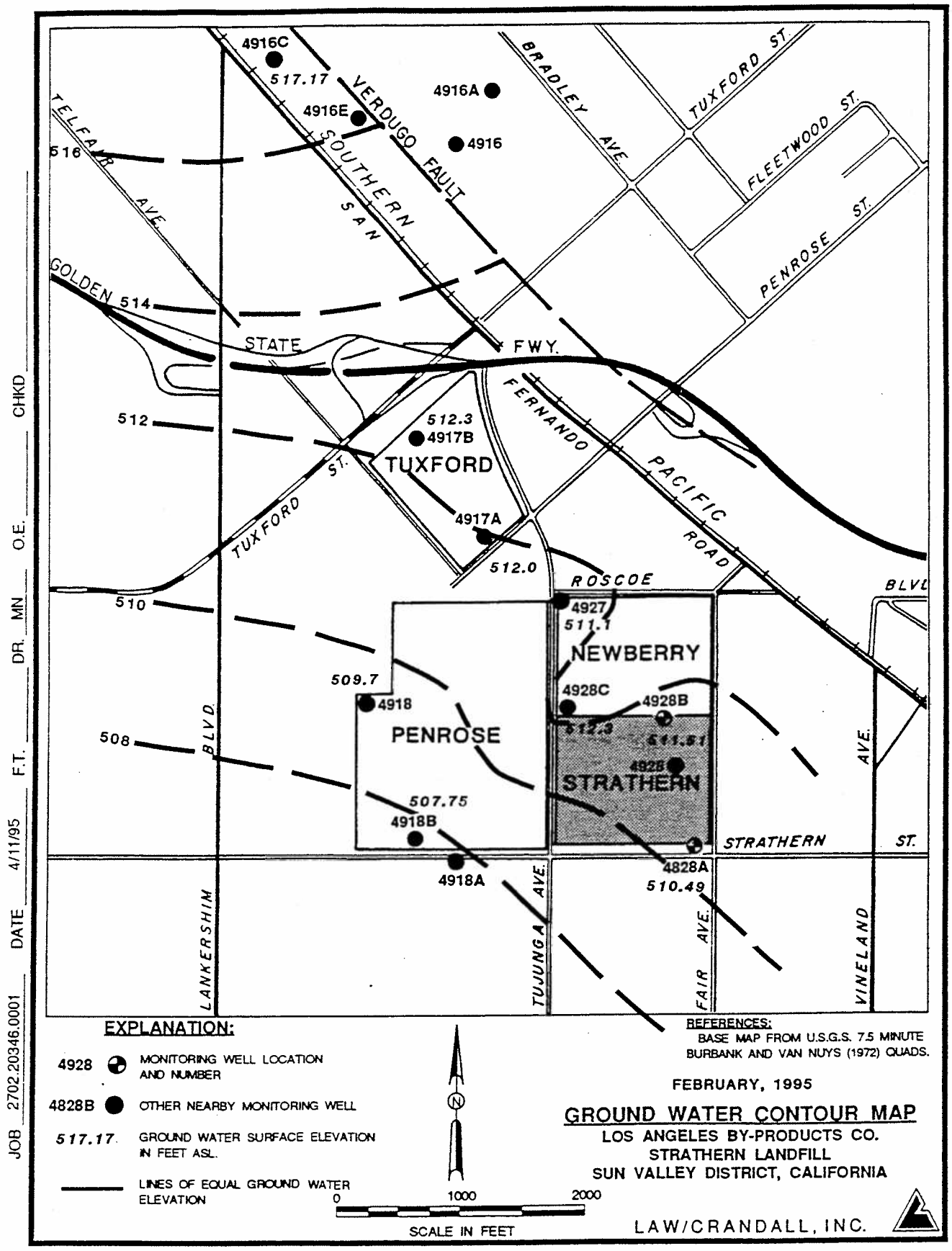
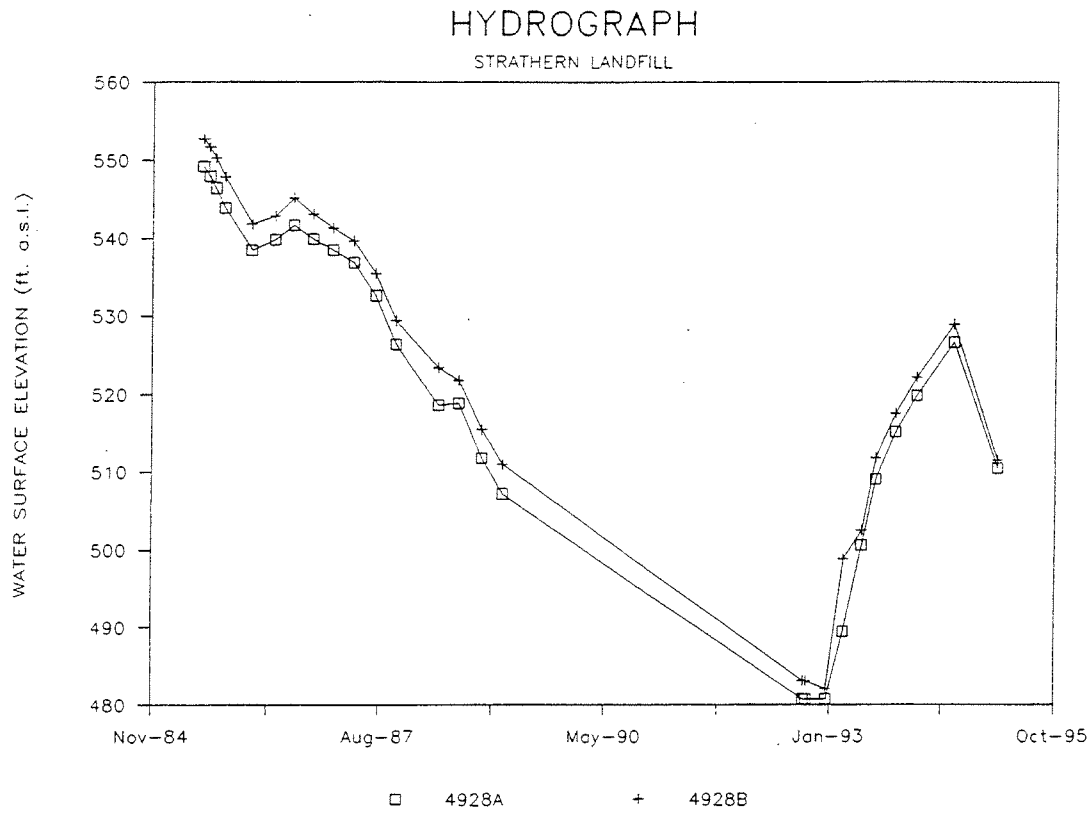


FIGURE 2

JOB 2702.20346.0001 DATE 4-11-95 F.T. _____ DR. _____ O.E. SLB CHKD _____



LAW/CRANDALL, INC.

FIGURE 3

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis, R.G. 6062
Project Geologist

Alice M. Campbell, C.E.G. 1157
Principal Hydrogeologist
Chief Scientist

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Attachments

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CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 27th day of April, 1995, at Los Angeles, California

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
~~Vice~~ President

ATTACHMENT A

GROUNDWATER SAMPLING PROTOCOL

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SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

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Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

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Sample Identification and Chain-of-Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

ATTACHMENT B

GROUNDWATER DATABASE

JOB 2702.20346.0001 DATE 4-11-95 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
WELL 4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
WELL 4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
WELL 4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
WELL 4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
WELL 4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
WELL 4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
WELL 4928A	29-Apr-86		539.84	6.6	68	800	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
WELL 4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
WELL 4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
WELL 4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
WELL 4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
WELL 4928A	24-Jul-87	803.10	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
WELL 4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
WELL 4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
WELL 4928A	28-Jul-88		518.82	7.4	67.1	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
WELL 4928A	08-Nov-88		511.61	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
WELL 4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
WELL 4928A	06-Oct-92		480.78																						
WELL 4928A	19-Oct-92		480.78																						
WELL 4928A	15-Jan-93		480.78																						
WELL 4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
WELL 4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
WELL 4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
WELL 4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
WELL 4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.30	0.26	530			
WELL 4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21.0	0.26	0.48	490			
WELL 4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34.0	<0.05	0.41	530	21		

LAW/CRANDALL, INC.

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JOB 2702.20346.0001 DATE 4-11-95 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)											
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
WELL 4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
WELL 4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
WELL 4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
WELL 4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
WELL 4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
WELL 4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
WELL 4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
WELL 4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
WELL 4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
WELL 4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
WELL 4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
WELL 4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
WELL 4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
WELL 4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
WELL 4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
WELL 4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
WELL 4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
WELL 4928A	06-Oct-92																			
WELL 4928A	19-Oct-92																			
WELL 4928A	15-Jan-93																			
WELL 4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.20	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
WELL 4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
WELL 4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
WELL 4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
WELL 4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
WELL 4928A	05-Aug-94	<0.5	1.60	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
WELL 4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C

LAW/CRANDALL, INC.

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JOB 2702.20346.0001 DATE 4-11-95 F.T. _____ DR. _____ O.E. SCB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)							
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928B	23-Oct-84	823.10							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
WELL 4928B	13-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
WELL 4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
WELL 4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
WELL 4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
WELL 4928B	16-Jan-86		541.32	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
WELL 4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
WELL 4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
WELL 4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
WELL 4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
WELL 4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
WELL 4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
WELL 4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
WELL 4928B	29-Apr-88	823.17	523.37	8.6	66.2	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
WELL 4928B	28-Jul-88		521.77	7.4	68.0	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
WELL 4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
WELL 4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
WELL 4928B	06-Oct-92	823.09	483.09																						
WELL 4928B	19-Oct-92		483.09																						
WELL 4928B	15-Jan-93		482.09																						
WELL 4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
WELL 4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
WELL 4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
WELL 4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
WELL 4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
WELL 4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
WELL 4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		

LAW/CRANDALL, INC.

003997

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JOB 2702.20346.0001 DATE 4-11-95 F.T. _____ DR. _____ O.E. SLB CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)											
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928B	23-Oct-84		4									<0.06	<0.08		2.200				0.082	B&C
WELL 4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
WELL 4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
WELL 4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
WELL 4928B	19-Sep-85	<1	3	<1								<0.035	<0.042		2.400				0.067	B&C
WELL 4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
WELL 4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
WELL 4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0.050	B&C
WELL 4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
WELL 4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
WELL 4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
WELL 4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
WELL 4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
WELL 4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
WELL 4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
WELL 4928B	06-Oct-92																			
WELL 4928B	19-Oct-92																			
WELL 4928B	15-Jan-93																			
WELL 4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.06	0.049	<0.04	<0.004	3.5	B&C
WELL 4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
WELL 4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.40	0.018	<0.04	<0.004	4.6	B&C
WELL 4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.10			<0.001		<0.02	82		3.80	0.003	<0.04		3.0	B&C
WELL 4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.50			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
WELL 4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
WELL 4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C

LAW/CRANDALL, INC.

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ATTACHMENT C

RESULTS OF LABORATORY ANALYSIS AND CHAIN-OF-CUSTODY RECORD

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G95-02-311

Received: 21 FEB 95

Mailed: MAR - 6 1995

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Halocarbons/EPA 8010		
Date Analyzed	02/23/95	02/23/95
Date Confirmed	02/23/95	02/23/95
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	1.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.80
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	2.7
Trichlorofluoromethane, ug/L	<0.5	<0.5

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Tetrachloroethene, ug/L	1.9	<0.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
EPA 8020		
Date Analyzed	02/23/95	02/23/95
Date Confirmed	02/23/95	02/23/95
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	1.2
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	320	450
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	320	450
Calcium (6010/200.7), mg/L	97	120
Magnesium (6010/200.7), mg/L	25	34
Chloride (325.3), mg/L	34	38
Copper (6010/200.7), mg/L	0.056	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010/200.7), mg/L	7.8	2.4
Manganese (6010/200.7), mg/L	0.17	0.22
pH (150.1/9040), Units	6.9	7.1
Potassium (6010/200.7), mg/L	5.3	5.5
Sodium (6010/200.7), mg/L	36	39
Sulfate, mg/L	67	32
Conductivity (120.1), umhos/cm	830	970
Dissolved Solids (160.1), mg/L	530	580
Zinc (6010/200.7), mg/L	5.2	4.8
Ion Balance, Percent	3.94	0.79

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Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Nitrate+Nitrite		
Nitrate+Nitrite (as NO3), mg/L	34	<0.1
Nitrate+Nitrite (as N), mg/L	7.6	<0.03
Digestion (3010), Date	03/02/95	03/02/95
Aluminum (6010/200.7), mg/L	0.28	<0.1
Fluoride, mg/L	0.41	0.44
COD (410.4), mg/L	21	6.9
Boron (6010/200.7), mg/L	<0.05	<0.05
Cadmium (6010/200.7), mg/L	<0.005	<0.005
Chromium (6010/200.7), mg/L	<0.01	<0.01
Lead (7421/239.2), mg/L	0.099	0.016
Nickel (6010/200.7), mg/L	<0.04	<0.04
Furnace Digestion (3020), Date	02/27/95	02/27/95

Kristie Sellers For MAV
Mark A. Valentini, PhD, Laboratory Director

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801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-02-311

Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 95-02-311-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 20 FEB 95

Anions	mg/L	meq/L
Nitrate+Nitrite (as NO3)	34	0.55
Chloride (325.3)	34	0.96
Sulfate	67	1.4
Bicarbonate (as HCO3)	390	6.4
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		9.4

Cations	mg/L	meq/L
Magnesium (6010/200.7)	25	2.1
Sodium (6010/200.7)	36	1.6
Potassium (6010/200.7)	5.3	0.14
Calcium (6010/200.7)	97	4.8
Total Millequivalents per Liter		8.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	320
Ca Hardness (as CaCO3)	240
Mg Hardness (as CaCO3)	100
Total Hardness	340
Iron (6010/200.7)	7.8
Manganese (6010/200.7)	0.17
Copper (6010/200.7)	0.056
Zinc (6010/200.7)	5.2
Surfactants, MBAS (425.1)	<0.1
Dissolved Solids (160.1)	530
Sp. Conductance, umhos/cm	830
pH (150.1/9040), units	6.9
Ion balance in percent	3.94

* Conforms to Title 22, California Administrative Code

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-02-311

Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 95-02-311-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 20 FEB 95

Anions	mg/L	meq/L
Nitrate+Nitrite (as NO3)	<0.1	<0.0016
Chloride (325.3)	38	1.1
Sulfate	32	0.67
Bicarbonate (as HCO3)	550	9
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		10.8

Cations	mg/L	meq/L
Magnesium (6010/200.7)	34	2.8
Sodium (6010/200.7)	39	1.7
Potassium (6010/200.7)	5.5	0.14
Calcium (6010/200.7)	120	6
Total Millequivalents per Liter		10.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	450
Ca Hardness (as CaCO3)	300
Mg Hardness (as CaCO3)	140
Total Hardness	440
Iron (6010/200.7)	2.4
Manganese (6010/200.7)	0.22
Copper (6010/200.7)	<0.02
Zinc (6010/200.7)	4.8
Surfactants, MBAS (425.1)	<0.1
Dissolved Solids (160.1)	580
Sp. Conductance, umhos/cm	970
pH (150.1/9040), units	7.1
Ion balance in percent	0.79

* Conforms to Title 22, California Administrative Code

Linda Geddes FOR MAV
Mark A. Valentini, PhD, Laboratory Director

BCA

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane	02.23.95	9515	54.1	50.0	ug/L	108
1,1,2,2-Tetrachloroethane	02.23.95	9515	48.9	50.0	ug/L	98
1,1,2-Trichloroethane	02.23.95	9515	51.9	50.0	ug/L	104
1,1-Dichloroethane	02.23.95	9515	53.7	50.0	ug/L	107
1,1-Dichloroethene	02.23.95	9515	56.4	50.0	ug/L	113
1,2-Dichloroethane	02.23.95	9515	54.5	50.0	ug/L	109
1,2-Dichlorobenzene	02.23.95	9515	50.1	50.0	ug/L	100
1,2-Dichloropropane	02.23.95	9515	53.7	50.0	ug/L	107
1,3-Dichlorobenzene	02.23.95	9515	50.3	50.0	ug/L	101
1,4-Dichlorobenzene	02.23.95	9515	51.9	50.0	ug/L	104
Bromodichloromethane	02.23.95	9515	50.6	50.0	ug/L	101
Bromomethane	02.23.95	9515	58.5	50.0	ug/L	117
Bromoform	02.23.95	9515	38.0	50.0	ug/L	76
Chlorobenzene	02.23.95	9515	53.7	50.0	ug/L	107
Carbon Tetrachloride	02.23.95	9515	53.7	50.0	ug/L	107
Chloroethane	02.23.95	9515	55.5	50.0	ug/L	111
Chloroform	02.23.95	9515	55.3	50.0	ug/L	111
Chloromethane	02.23.95	9515	31.0	50.0	ug/L	62
Dibromochloromethane	02.23.95	9515	47.3	50.0	ug/L	95
Freon 113	02.23.95	9515	54.2	50.0	ug/L	108
Methylene chloride	02.23.95	9515	52.6	50.0	ug/L	105
Trichloroethene	02.23.95	9515	54.5	50.0	ug/L	109
Trichlorofluoromethane	02.23.95	9515	57.2	50.0	ug/L	114
Tetrachloroethene	02.23.95	9515	56.3	50.0	ug/L	113
Vinyl chloride	02.23.95	9515	50.1	50.0	ug/L	100
cis-1,2-Dichloroethene	02.23.95	9515	53.6	50.0	ug/L	107
cis-1,3-Dichloropropene	02.23.95	9515	52.2	50.0	ug/L	104
trans-1,2-Dichloroethene	02.23.95	9515	53.4	50.0	ug/L	107
trans-1,3-Dichloropropene	02.23.95	9515	50.4	50.0	ug/L	101
2. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane	02.23.95	9515	48.8	50.0	ug/L	98
1,1,2,2-Tetrachloroethane	02.23.95	9515	47.6	50.0	ug/L	95
1,1,2-Trichloroethane	02.23.95	9515	50.2	50.0	ug/L	100
1,1-Dichloroethane	02.23.95	9515	48.2	50.0	ug/L	96
1,1-Dichloroethene	02.23.95	9515	49.4	50.0	ug/L	99
1,2-Dichloroethane	02.23.95	9515	49.6	50.0	ug/L	99
1,2-Dichlorobenzene	02.23.95	9515	48.7	50.0	ug/L	97
1,2-Dichloropropane	02.23.95	9515	50.1	50.0	ug/L	100
1,3-Dichlorobenzene	02.23.95	9515	50.0	50.0	ug/L	100
1,4-Dichlorobenzene	02.23.95	9515	50.8	50.0	ug/L	102

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Bromodichloromethane	02.23.95	9515	48.7	50.0	ug/L	97
Bromomethane	02.23.95	9515	73.6	50.0	ug/L	147
Bromoform	02.23.95	9515	42.8	50.0	ug/L	86
Chlorobenzene	02.23.95	9515	50.2	50.0	ug/L	100
Carbon Tetrachloride	02.23.95	9515	48.5	50.0	ug/L	97
Chloroethane	02.23.95	9515	65.8	50.0	ug/L	132
Chloroform	02.23.95	9515	49.2	50.0	ug/L	98
Chloromethane	02.23.95	9515	33.5	50.0	ug/L	67
Dibromochloromethane	02.23.95	9515	48.7	50.0	ug/L	97
Freon 113	02.23.95	9515	46.9	50.0	ug/L	94
Methylene chloride	02.23.95	9515	48.4	50.0	ug/L	97
Trichloroethene	02.23.95	9515	50.3	50.0	ug/L	101
Trichlorofluoromethane	02.23.95	9515	49.3	50.0	ug/L	99
Tetrachloroethene	02.23.95	9515	51.7	50.0	ug/L	103
Vinyl chloride	02.23.95	9515	48.3	50.0	ug/L	97
cis-1,2-Dichloroethene	02.23.95	9515	48.4	50.0	ug/L	97
cis-1,3-Dichloropropene	02.23.95	9515	50.9	50.0	ug/L	102
trans-1,2-Dichloroethene	02.23.95	9515	47.9	50.0	ug/L	96
trans-1,3-Dichloropropene	02.23.95	9515	49.2	50.0	ug/L	98
3. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene	02.23.95	9515	49.0	50.0	ug/L	98
1,3-Dichlorobenzene	02.23.95	9515	50.1	50.0	ug/L	100
1,4-Dichlorobenzene	02.23.95	9515	48.8	50.0	ug/L	98
Benzene	02.23.95	9515	52.0	50.0	ug/L	104
Chlorobenzene	02.23.95	9515	50.0	50.0	ug/L	100
Ethylbenzene	02.23.95	9515	52.5	50.0	ug/L	105
Toluene	02.23.95	9515	51.9	50.0	ug/L	104
Total Xylene Isomers	02.23.95	9515	155	150	ug/L	103
4. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene	02.23.95	9515	47.6	50.0	ug/L	95
1,3-Dichlorobenzene	02.23.95	9515	48.4	50.0	ug/L	97
1,4-Dichlorobenzene	02.23.95	9515	48.8	50.0	ug/L	98
Benzene	02.23.95	9515	49.5	50.0	ug/L	99
Chlorobenzene	02.23.95	9515	47.9	50.0	ug/L	96
Ethylbenzene	02.23.95	9515	51.3	50.0	ug/L	103
Toluene	02.23.95	9515	49.4	50.0	ug/L	99
Total Xylene Isomers	02.23.95	9515	148	150	ug/L	99
5. Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	02.22.95	959	601	596	mg/L	101
Total Alkalinity (as CaCO3)	02.22.95	959	601	596	mg/L	101
5. Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	02.22.95	959	596	596	mg/L	100

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Total Alkalinity (as CaCO3)	02.22.95	959	596	596	mg/L	100
7. Calcium (6010/200.	03.03.95	95273	46.0	50.0	mg/L	92
8. Magnesium (6010/20	03.03.95	95273	46.5	50.0	mg/L	93
9. Chloride (325.3)	02.21.95	950221	12.0	12.5	mg/L	96
10. Chloride (325.3)	02.21.95	950221	12.1	12.5	mg/L	97
11. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
12. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
13. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
14. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
15. Copper (6010/200.7	03.03.95	95273	0.838	1.00	mg/L	84
16. Surfactants, MBAS	02.21.95	9517	0.974	1.00	mg/L	97
17. Surfactants, MBAS	02.21.95	9517	0.962	1.00	mg/L	96
18. Iron (6010/200.7)	03.03.95	95273	4.64	5.00	mg/L	93
19. Manganese (6010/20	03.03.95	95273	0.856	1.00	mg/L	86
20. pH (150.1/9040)	02.21.95	9575	6.01	6.00	Units	100
21. pH (150.1/9040)	02.21.95	9575	6.00	6.00	Units	100
22. Potassium (6010/20	03.03.95	95273	45.1	50.0	mg/L	90
23. Sodium (6010/200.7	03.03.95	95273	45.6	50.0	mg/L	91
24. Sulfate	02.21.95	950221	23.6	25.0	mg/L	94
25. Sulfate	02.21.95	950221	23.7	25.0	mg/L	95
26. Sulfate	02.21.95	950221	24.6	25.0	mg/L	98
27. Sulfate	02.21.95	950221	24.3	25.0	mg/L	97
28. Sulfate	02.21.95	950221	27.2	25.0	mg/L	109
29. Sulfate	02.21.95	950221	24.3	25.0	mg/L	97
30. Conductivity (120.	02.27.95	9514	1400	1410	umhos/cm	99
31. Conductivity (120.	02.27.95	9514	1400	1410	umhos/cm	99
32. Dissolved Solids (	02.23.95	9515	1010	1000	mg/L	101
33. Dissolved Solids (	02.23.95	9515	1010	1000	mg/L	101
34. Zinc (6010/200.7)	03.03.95	95273	0.995	1.00	mg/L	100
35. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	24.0	25.0	mg/L	96
Nitrate+Nitrite (as N)	02.21.95	950221	5.42	5.64	mg/L	96
36. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	24.1	25.0	mg/L	96
Nitrate+Nitrite (as N)	02.21.95	950221	5.44	5.64	mg/L	96
37. Aluminum (6010/200	03.03.95	95273	4.12	5.00	mg/L	82
38. Fluoride	02.21.95	950221	5.19	5.00	mg/L	104
39. Fluoride	02.21.95	950221	5.18	5.00	mg/L	104
40. COD (410.4)	02.21.95	9518	90.2	100	mg/L	90
41. COD (410.4)	02.21.95	9518	94.2	100	mg/L	94
42. Boron (6010/200.7)	02.27.95	95259	0.899	1.00	mg/L	90
43. Cadmium (6010/200.	03.03.95	95273	0.977	1.00	mg/L	98
44. Chromium (6010/200	03.03.95	95273	0.884	1.00	mg/L	88
45. Lead (7421/239.2)	03.02.95	95255	0.0485	0.0500	mg/L	97
46. Nickel (6010/200.7	03.03.95	95273	0.852	1.00	mg/L	85

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

ADDITIONAL LCS PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
1. Halocarbons/EPA 8010							
Date Analyzed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane		02.23.95	9515	54.1	48.8	ug/L	10
1,1,2,2-Tetrachloroethane		02.23.95	9515	48.9	47.6	ug/L	3
1,1,2-Trichloroethane		02.23.95	9515	51.9	50.2	ug/L	3
1,1-Dichloroethane		02.23.95	9515	53.7	48.2	ug/L	11
1,1-Dichloroethene		02.23.95	9515	56.4	49.4	ug/L	13
1,2-Dichloroethane		02.23.95	9515	54.5	49.6	ug/L	9
1,2-Dichlorobenzene		02.23.95	9515	50.1	48.7	ug/L	3
1,2-Dichloropropane		02.23.95	9515	53.7	50.1	ug/L	7
1,3-Dichlorobenzene		02.23.95	9515	50.3	50.0	ug/L	1
1,4-Dichlorobenzene		02.23.95	9515	51.9	50.8	ug/L	2
Bromodichloromethane		02.23.95	9515	50.6	48.7	ug/L	4
Bromomethane		02.23.95	9515	58.5	73.6	ug/L	23
Bromoform		02.23.95	9515	38.0	42.8	ug/L	12
Chlorobenzene		02.23.95	9515	53.7	50.2	ug/L	7
Carbon Tetrachloride		02.23.95	9515	53.7	48.5	ug/L	10
Chloroethane		02.23.95	9515	55.5	65.8	ug/L	17
Chloroform		02.23.95	9515	55.3	49.2	ug/L	12
Chloromethane		02.23.95	9515	31.0	33.5	ug/L	8
Dibromochloromethane		02.23.95	9515	47.3	48.7	ug/L	3
Freon 113		02.23.95	9515	54.2	46.9	ug/L	14
Methylene chloride		02.23.95	9515	52.6	48.4	ug/L	8
Trichloroethene		02.23.95	9515	54.5	50.3	ug/L	8
Trichlorofluoromethane		02.23.95	9515	57.2	49.3	ug/L	15
Tetrachloroethene		02.23.95	9515	56.3	51.7	ug/L	9
Vinyl chloride		02.23.95	9515	50.1	48.3	ug/L	4
cis-1,2-Dichloroethene		02.23.95	9515	53.6	48.4	ug/L	10
cis-1,3-Dichloropropene		02.23.95	9515	52.2	50.9	ug/L	3
trans-1,2-Dichloroethene		02.23.95	9515	53.4	47.9	ug/L	11
trans-1,3-Dichloropropene		02.23.95	9515	50.4	49.2	ug/L	2
2. EPA 8020							
Date Analyzed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene		02.23.95	9515	49.0	47.6	ug/L	3
1,3-Dichlorobenzene		02.23.95	9515	50.1	48.4	ug/L	3
1,4-Dichlorobenzene		02.23.95	9515	48.8	48.8	ug/L	0
Benzene		02.23.95	9515	52.0	49.5	ug/L	5
Chlorobenzene		02.23.95	9515	50.0	47.9	ug/L	4
Ethylbenzene		02.23.95	9515	52.5	51.3	ug/L	2
Toluene		02.23.95	9515	51.9	49.4	ug/L	5
Total Xylene Isomers		02.23.95	9515	155	148	ug/L	5
3. Alkalinity (310.1)							
Carbonate Alk (as CaCO3)		02.22.95	959	<1	<1	mg/L	NA

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

ADDITIONAL LCS PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
Bicarbonate Alk (as CaCO3)		02.22.95	959	601	596	mg/L	1
Hydroxide Alk (as CaCO3)		02.22.95	959	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)		02.22.95	959	601	596	mg/L	1
4. Chloride (325.3)		02.21.95	950221	12.0	12.1	mg/L	1
5. Surfactants, MBAS		02.21.95	9517	0.974	0.962	mg/L	1
6. pH (150.1/9040)		02.21.95	9575	6.01	6.00	Units	0
7. Sulfate		02.21.95	950221	23.6	23.7	mg/L	0
8. Conductivity (120.		02.27.95	9514	1400	1400	umhos/cm	0
9. Dissolved Solids (		02.23.95	9515	1010	1010	mg/L	0
10. Nitrate+Nitrite							
Nitrate+Nitrite (as NO3)		02.21.95	950221	24.0	24.1	mg/L	0
Nitrate+Nitrite (as N)		02.21.95	950221	5.42	5.44	mg/L	0
11. Fluoride		02.21.95	950221	5.19	5.18	mg/L	0
12. COD (410.4)		02.21.95	9518	90.2	94.2	mg/L	4

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ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER
(DRY WEIGHT CORRECTED)

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE % DIFF
1. pH (150.1/9040)		02.21.95	9575	6.9	6.9	Units	0

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ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC PRECISION (DUPLICATE SPIKES)
FOR SAMPLES ON THIS ORDER
(DRY WEIGHT CORRECTED)

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. Chloride (325.3)		02.21.95	950221	227	225	mg/L	1
2. Surfactants, MBAS		02.21.95	9517	0.787	1.10	mg/L	33
3. Sulfate		02.21.95	950221	443	440	mg/L	1
4. Nitrate+Nitrite							
Nitrate+Nitrite (as NO3)		02.21.95	950221	50.6	50.3	mg/L	1
Nitrate+Nitrite (as N)		02.21.95	950221	11.4	11.3	mg/L	1
5. Fluoride		02.21.95	950221	4.62	4.56	mg/L	1
6. Alkalinity (310.1)							
Bicarbonate Alk (as CaCO3)		02.22.95	959	930	940	mg/L	1
Total Alkalinity (as CaCO3)		02.22.95	959	930	940	mg/L	1

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC ACCURACY (SPIKES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
1. Chloride (325.3)		02.21.95	950221	226	34	234	mg/L	96
2. Surfactants, MBAS		02.21.95	9517	0.9435	<0.1	1.00	mg/L	94
3. Sulfate		02.21.95	950221	441.5	67	467	mg/L	94
4. Nitrate+Nitrite								
Nitrate+Nitrite (as NO3)		02.21.95	950221	50.45	34	49.6	mg/L	NC
Nitrate+Nitrite (as N)		02.21.95	950221	11.35	7.6	11.2	mg/L	NC
5. Fluoride		02.21.95	950221	4.59	0.41	4.41	mg/L	105
6. Alkalinity (310.1)								
Bicarbonate Alk (as CaCO3)		02.22.95	959	935	450	922	mg/L	103
Total Alkalinity (as CaCO3)		02.22.95	959	935	450	922	mg/L	103

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	NA	Date	8010
1,1,1-Trichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1,2,2-Tetrachloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1,2-Trichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1-Dichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichloropropane	02.23.95	9515	0	0.5	ug/L	8010
1,3-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
1,4-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
Bromodichloromethane	02.23.95	9515	0	0.5	ug/L	8010
Bromomethane	02.23.95	9515	0	0.5	ug/L	8010
Bromoform	02.23.95	9515	0	0.5	ug/L	8010
Chlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
Carbon Tetrachloride	02.23.95	9515	0	0.5	ug/L	8010
Chloroethane	02.23.95	9515	0	0.5	ug/L	8010
Chloroform	02.23.95	9515	0	0.5	ug/L	8010
Chloromethane	02.23.95	9515	0	0.5	ug/L	8010
Dibromochloromethane	02.23.95	9515	0	0.5	ug/L	8010
Freon 113	02.23.95	9515	0	0.5	ug/L	8010
Methylene chloride	02.23.95	9515	0.089	0.5	ug/L	8010
Trichloroethene	02.23.95	9515	0	0.5	ug/L	8010
Trichlorofluoromethane	02.23.95	9515	0	0.5	ug/L	8010
Tetrachloroethene	02.23.95	9515	0	0.5	ug/L	8010
Vinyl chloride	02.23.95	9515	0	0.5	ug/L	8010
cis-1,2-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
cis-1,3-Dichloropropene	02.23.95	9515	0	0.5	ug/L	8010
trans-1,2-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
trans-1,3-Dichloropropene	02.23.95	9515	0	0.5	ug/L	8010
2. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	NA	Date	8020
1,2-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
1,3-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
1,4-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
Benzene	02.23.95	9515	0	0.5	ug/L	8020
Chlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
Ethylbenzene	02.23.95	9515	0	0.5	ug/L	8020
Toluene	02.23.95	9515	0	0.5	ug/L	8020
Total Xylene Isomers	02.23.95	9515	0	1	ug/L	8020
3. Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
Bicarbonate Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Total Alkalinity (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
. Calcium (6010/200.	03.02.95	95273	0.090	0.5	mg/L	6010
5. Magnesium (6010/20	03.02.95	95273	0	0.1	mg/L	6010
. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
8. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
9. Copper (6010/200.7	03.02.95	95273	0	0.02	mg/L	6010
0. Surfactants, MBAS	02.21.95	9517	0	0.1	mg/L	425.1
1. Iron (6010/200.7)	03.02.95	95273	0.0333	0.04	mg/L	6010
12. Manganese (6010/20	03.02.95	95273	0	0.01	mg/L	6010
3. Potassium (6010/20	03.02.95	95273	0.115	0.5	mg/L	6010
4. Sodium (6010/200.7	03.02.95	95273	0.071	0.5	mg/L	6010
15. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
6. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
7. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
8. Dissolved Solids (	02.23.95	9515	3	10	mg/L	160.1
19. Zinc (6010/200.7)	03.02.95	95273	0	0.01	mg/L	6010
0. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	0	NA	mg/L	300.0
Nitrate+Nitrite (as N)	02.21.95	950221	0	NA	mg/L	300.0
1. Aluminum (6010/200	03.02.95	95273	0.078	0.1	mg/L	6010
2. Fluoride	02.21.95	950221	0	NA	mg/L	300.0
23. COD (410.4)	02.21.95	9518	0	6		410.4
24. Boron (6010/200.7)	02.27.95	95259	0	0.05	mg/L	6010
5. Cadmium (6010/200.	03.02.95	95273	0	0.005	mg/L	6010
26. Chromium (6010/200	03.02.95	95273	0	0.01	mg/L	6010
27. Lead (7421/239.2)	03.02.95	95255	0	0.002	mg/L	7421
8. Nickel (6010/200.7	03.02.95	95273	0	0.04	mg/L	6010

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CHAIN OF CUSTODY RECORD

BCA Log Number G 75-[illegible]-3,2

311

Client name	LAW / C Randell
Address	200 Citadel Dr.
City, State, Zip	LA Ca 90046
Project or PO#	2702.20346
Phone #	(213) 889-5300
Report attention	Bill O'Brien

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	Gen. Min	Cd Cr. Ni 6010	Pb 7421	B	601/602	COD		Hazardous sample Special handling required	Remarks
	2.20.95	1250	GW	4928A	3	✓	✓	✓	✓	✓	✓			Send Bill to:
	2.20.95	1300	GW	4928B	6	✓	✓	✓	✓	✓	✓			LA By-Products
														ATTN. Mike McAllister
														L.A. [illegible]

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	LAW / C Randell	2.21.95	
Received by	Sharon Malone	Sharon Malone	BC Analytical	2.21.95	1100
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

1995 ANNUAL REPORT

GROUNDWATER MONITORING

STRATHERN LANDFILL
Sun Valley District
Los Angeles, California

Prepared for

Los Angeles By-Products Company
Los Angeles, California

Law/Crandall Project 70111-2-0346

January 29, 1996

004018

LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

January 29, 1996

Mr. Mike McAllister

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Subject: **1995 Annual Report—Groundwater Monitoring**
Strathern Landfill
Sun Valley District
Los Angeles, California
RWQCB CI 7055
Law/Crandall Project 70111-2-0346

INTRODUCTORY SUMMARY

This report is a summary of the 1995 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells rose in 1995 in response to precipitation during the winter months and spreading operations at the Hansen, Branford and Tujunga spreading grounds. Groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese and total dissolved solids (TDS). However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall measures groundwater levels, collects groundwater samples, analyzes the laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under Monitoring and Reporting Program (MRP) 7055.

Law/Crandall prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings

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LAW/CRANDALL, INC.
200 Citadel Drive
Los Angeles, California 90040

DATE November 3, 1994	JOB NO. 2702.20346
PROJECT NAME: Strathern Landfill	
ATTENTION: Mr. Mike McAllister	
RE: Quarterly Monitoring Report	

TO: Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, CA 90058-1195
Attention: Mr. Mike McAllister

LETTER OF TRANSMITTAL

GENTLEMEN: WE ARE SENDING YOU ☒ Attached, ☐ Under separate cover, via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

COPIES	DATE	DESCRIPTION
2	11/3/94	3rd Quarter 1994 Report, Strathern Landfill, Project No. 2702.20346.0001

THESE ARE TRANSMITTED as checked below:

☐ For Approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ **FOR BIDS DUE** _____ 19__ ☐ **PRINTS RETURNED AFTER LOAN TO US**

REMARKS Report was delivered to the RWQCB on 10/29/94

COPY TO _____

SIGNED: William J. O'Braitis

William J. O'Braitis

Strathern File

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and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

Site Description

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement Order 91-086, MRP 7055, adopted by the RWQCB, Los Angeles Region, on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This monitoring report contains an annual summary of the 1995 groundwater monitoring program. Law/Crandall collected groundwater samples in February and August of 1995 and prepared this report. BC Analytical Laboratories performed the chemical analyses. BC Analytical is certified for such analyses by the State Department of Health Services.

Monitoring Well Network

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

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Table 1: Monitoring Well Construction Details

Well	Owner	Land Surface Elevation (feet asl)	Total Depth (ft)	Screen Interval (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1995 monitoring results, including groundwater levels and groundwater quality.

Groundwater Levels

Law/Crandall measured groundwater levels in February and August of 1995. In response to precipitation and groundwater recharge operations at the Hansen, Branford and Tunjunga spreading grounds, groundwater levels rose an average of 15 feet in the monitoring wells between February and August this year. Figure 3 contains the hydrographs for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels for February and August. Appendix B contains these contour maps.

Groundwater Flow Velocity and Direction

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. Since groundwater gradient was to the south during the year, we calculated K in that direction. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient between the two monitoring wells was 0.00094 ft/ft in February and

0.0030 ft/ft in August. Groundwater flow for February was 0.57 ft/day or 210 ft/year. In August, flow was 1.79 ft/day or 660 ft/year. At these flow velocities it would take about 2.5 years for groundwater to flow from the north side of the property to the south side.

Groundwater Quality

General

We collected groundwater samples in February and August of 1995. We analyzed for carbon dioxide (CO_2), temperature, alkalinity, pH and electrical conductivity (EC) in the field. Lab analyses were done for pH, EC, general minerals, and volatile organic compounds. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix C contains the groundwater sampling protocol. Appendix D contains analytical results from BC Analytical Laboratories of groundwater samples collected in 1995. Appendix D also contains the chain-of-custody records

Inorganics

Laboratory analyses indicated that during the year, the groundwater met California Drinking Water Standards for most constituents. However, in upgradient well 4928B, levels of iron, manganese, and TDS exceeded drinking water limits during the first and third quarters. Zinc exceeded met California Drinking Water Standards during the first quarter. In downgradient well 4928A, levels of iron, manganese, and TDS exceeded drinking water limits during the first quarter, and iron and TDS levels during the third quarter. Table 2 shows selected 1995 results compared to Drinking Water Standards.

TDS levels may be related to changes in groundwater levels. The last time water levels were as high as they now are, TDS levels were above drinking water limits. Water levels have been rising in the area since at least April 1993 (Figure 3). With the rising water levels, TDS levels in both wells 4928A and 4928B have increased. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels rose, dissolved solids increased. See Appendix E for water quality history graphs.

Table 2: Site Water Quality vs. California Drinking Water Standards
1995 Cumulative Data

Constituent	Recommended Maximum Contaminant Level*	Water Source			
		4928A		4928B	
		Feb	Aug	Feb	Aug
Inorganic (mg/L)					
Total Dissolved Solids (TDS)	500	530	560	580	610
Chloride (Cl)	250	34	35	38	26
Sulfate (SO_4)	250	67	67	32	45
Nitrate (NO_3)	45	34	42	<0.1	30
Iron (Fe)	0.3	7.8	0.35	2.4	18
Manganese (Mn)	0.05	0.17	0.013	0.22	0.31
Zinc (Zn)	5	5.2	1.5	4.8	2.0
Organic (ug/L)					
Trichloroethylene (TCE)	5	<0.5	<0.2	2.7	1.3
Tetrachloroethylene (PCE)	5	1.9	2.5	<0.5	4.8
Trichlorofluoromethane	150	<0.5	<0.2	0.68	0.29
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.2	0.80	0.56
1,1-dichloroethane (1,1-DCA)	5	<0.5	<0.2	<0.5	4.0
1,1-dichloroethene (1,1-DCE)	6	<0.5	<0.2	<0.5	0.26
1,4-dichlorobenzene (1,4-DCB)	5	<0.5	<0.2	<0.5	0.21

** Source: CCR, Title 22, Division 4, Chapter 15*

High iron and manganese levels may also be related to rising water levels. Wells 4928A and 4928B are built with steel well screen. Low water levels prior to 1993 exposed well screen to air and likely resulted in corrosion of the exposed screen. As water levels rose between 1993 and now, the corroded screen was resubmerged. Some of the rust particles may have entered the sample bailer and were included in the total metals analysis. Since EPA sampling protocol does not allow field filtering of total metals samples, we did not field filter these samples. Acid

preservative may have dissolved particulate metals, causing increased dissolved metals detected in the chemical analyses. Also, the pH levels have continued to decline in wells 4928A and 4928B. The more acidic groundwater (lower pH levels) in contact with rust particles in the well casings may be a source of higher metals concentrations. The increase in CO_2 levels may cause or at least indicate acidification of groundwater.

Field CO_2 measurements, which have shown relatively high values since testing began in 1985, increased in 1995. Increased CO_2 is not likely the result of landfill activities because Strathern landfill accepts only inert fill. Chloride and nitrate in both upgradient and downgradient wells, and the February 1994 positive result for MBAS in well 4928A, suggests sewage wastes may be the cause. No sewage wastes are disposed at the landfill.

To illustrate relationships of ions in groundwater over time, we made Schoeller plots of both the upgradient well 4928B and downgradient well 4928A for July 1985 and August 1995. The Schoeller plots are shown on Figures 4 and 5. Schoeller plots compare log milliequivalents per liter (meq/l) of Ca, Mg, Na+K, Cl, SO_4, and CO_3+HCO_3 (from left to right). Naturally occurring, calcium-bicarbonate groundwater has a symmetrical, concave-upward, Schoeller plot. Under natural conditions, calcium and carbonate+bicarbonate should have roughly the same log meq/l value. In 1985 and 1995, CO_3+HCO_3 was higher than Ca. This indicates that Ca is lower than what would be expected for groundwater in equilibrium. This is likely the result of added CO_2 in the system. Carbon dioxide can be added to a groundwater system through decomposition of organic matter. Historical groundwater chemical analysis shows that levels of total organic carbon (TOC) and chemical oxygen demand (COD) have been elevated at both monitoring wells, especially at the downgradient well 4928A (Appendix A), throughout the history of monitoring at the site. In addition, nitrate levels have been elevated in both monitoring wells. Organic carbon, with nitrate acting as a fertilizer, facilitates bacterial CO_2 production.

The Schoeller plots also show sodium+potassium levels to be higher than expected for calcium bicarbonate water in 1995, and especially in 1985. This is likely the result of increased CO_2 which in turn lowers pH. Lower pH causes ion exchange (softening) which may explain the relatively low concentration of Ca and high concentration of Na+K. Figures 4 and 5 show that the departure from the typical, concave-up, calcium-bicarbonate water Schoeller plot was less pronounced in

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1995 than it was in 1985. The chemical conditions causing the departure existed before the landfill began operation, and are therefore unrelated to the fill.

The statistical distribution graphs (Appendix E) show that for all constituents plotted, 1995 data fall generally toward the center of the historic ranges except for sulfate in well 4928A and nitrate in both monitoring wells. Based on the statistical data, the water is within historical ranges.

Organics

During the first and third quarter, trace amounts of tetrachloroethylene (PCE) were detected in both monitoring wells and traces of trichloroethylene (TCE) and 1,1-dichloroethylene (1,1-DCE) were detected in upgradient well 4928B. Levels were below California Drinking Water Standards for PCE and TCE. Trace amounts of several other organic constituents were detected in well 4928A and 4928B. No pattern has emerged from this date, and the landfill does not appear to be the source.

CONCLUSIONS AND RECOMMENDATIONS

Water levels have continued to rise due to precipitation during the winter months and recharge operations at the Hansen, Branford and Tujunga spreading grounds. There seems to be a correlation between rising water levels and increasing dissolved solids. The Schoeller plots show a persistent departure from normal calcium-bicarbonate groundwater since monitoring began in 1984. There does not appear to be an association between the start of landfill operations and any unusual change in groundwater character. Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall will continue to monitor the groundwater at Strathern Landfill.

004026

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL

William J. O'Braitis, R.G. 6062
Senior Geologist

for
Richard W. Shatz, H.G. 84
Principal Hydrogeologist

i:\70111\20346\03461r01.doc/SLB:cm
(2 copies submitted)

Attachments

CERTIFICATION AND DECLARATION

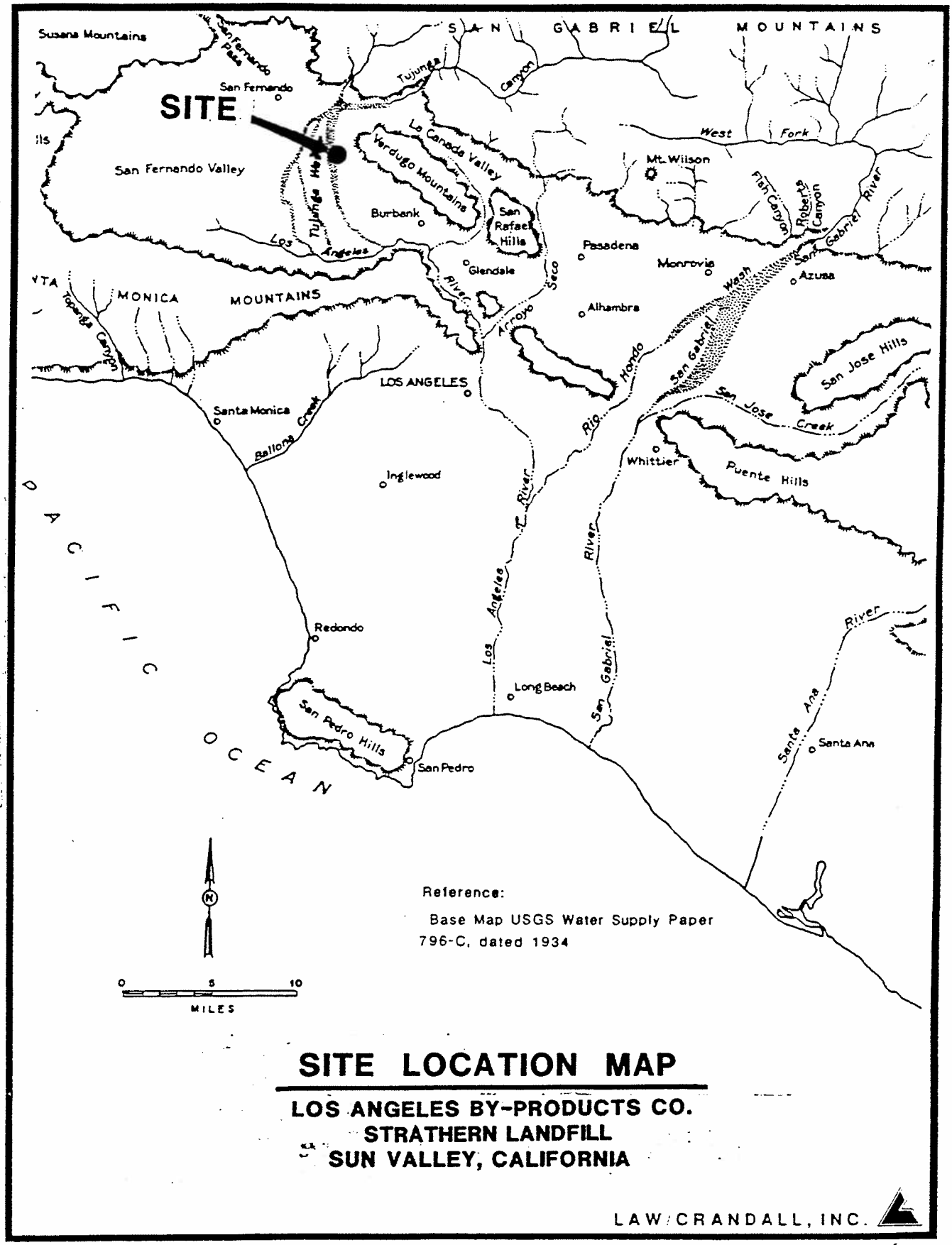
I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 29th day of January, 1995, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
[redacted] President

FIGURES



SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

004030

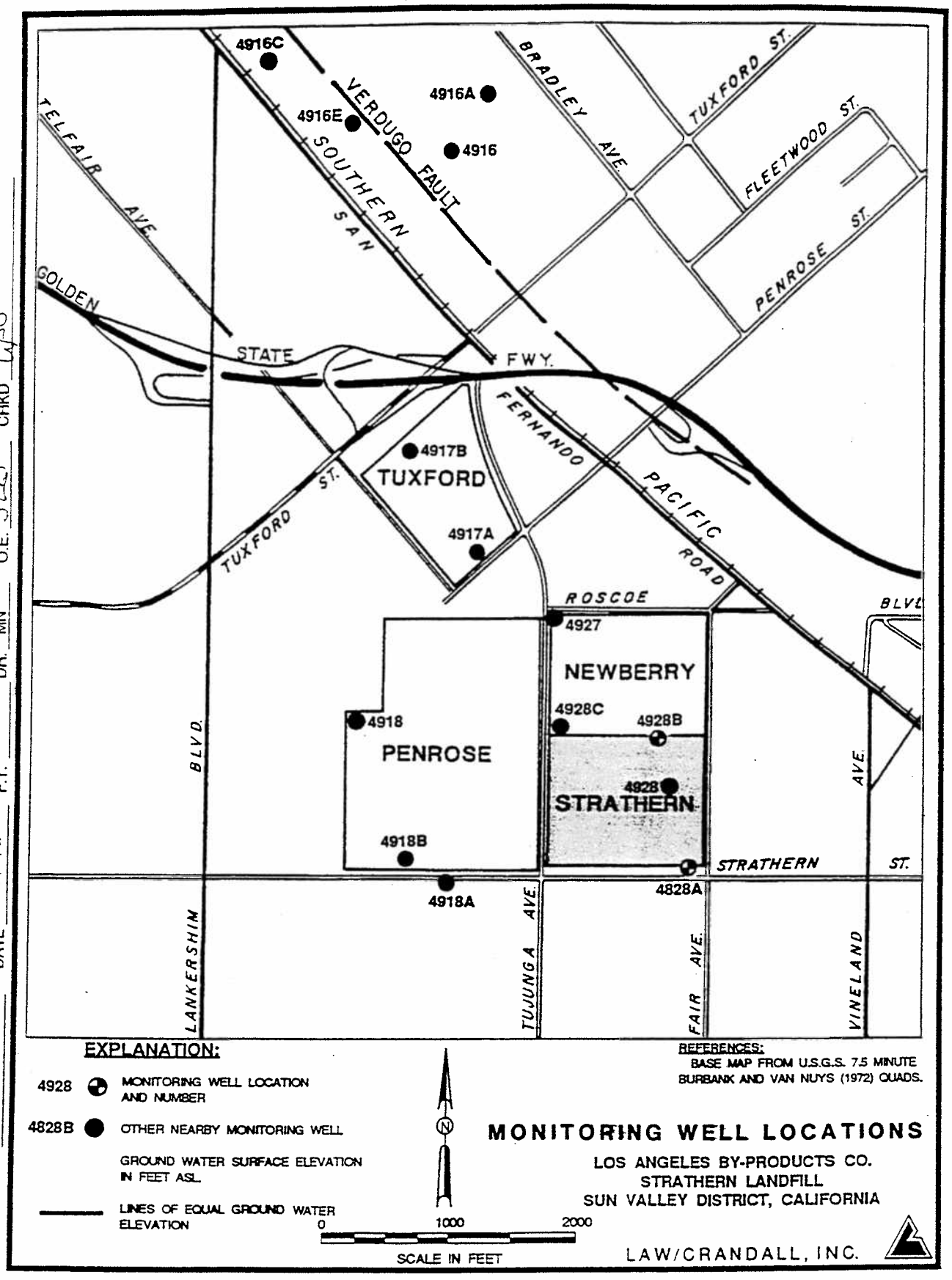
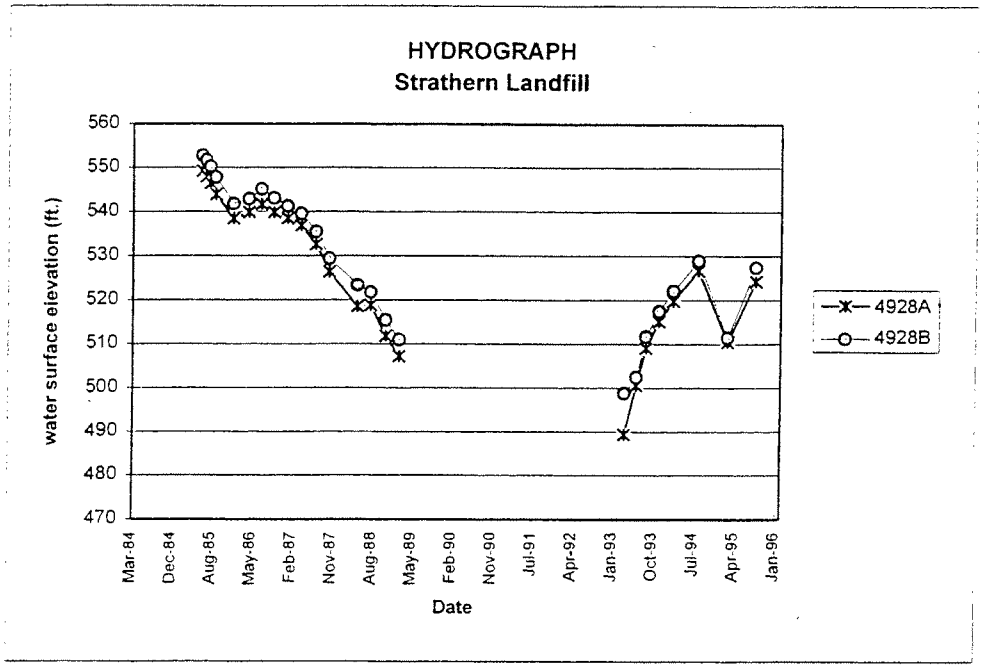

4916C
VERDUGO FAULT
SOUTHERN
SAN
4916E
4916A
4916
BRADLEY AVE.
TUXFORD ST.
FLEETWOOD ST.
PENROSE ST.
TELFAIR AVE.
GOLDEN
STATE
FWY.
FERNANDO
PACIFIC
ROAD
4917B
TUXFORD
4917A
TUXFORD ST.
ROSCOE
BLVD
4927
NEWBERRY
4928C
4928B
4918
PENROSE
4928
STRATHERN
AVE.
BLVD.
4918B
STRATHERN ST.
4828A
4918A
LANKERSHIM
TUJUNGA AVE.
FAIR AVE.
VINELAND
JOB 2111-2 DATE 1-19-96 DR. MN O.E. SLB CHKD LJ30
EXPLANATION:
4928 MONITORING WELL LOCATION AND NUMBER
4828B OTHER NEARBY MONITORING WELL
GROUND WATER SURFACE ELEVATION IN FEET ASL
LINES OF EQUAL GROUND WATER ELEVATION
0 1000 2000
SCALE IN FEET
REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.
MONITORING WELL LOCATIONS
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA
LAW/CRANDALL, INC.

FIGURE 2

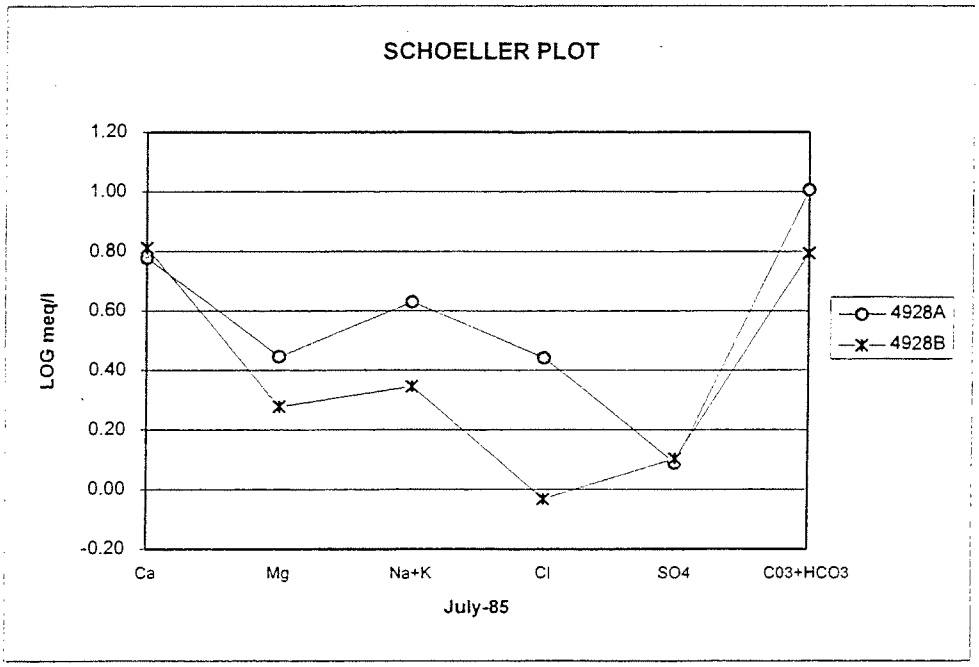
JOB 7611-2-05346 DATE 1-25-96 F.T. _____ DR. _____ O.E. SLS CHKD WJO



LAW/CRANDALL, INC.

FIGURE 3

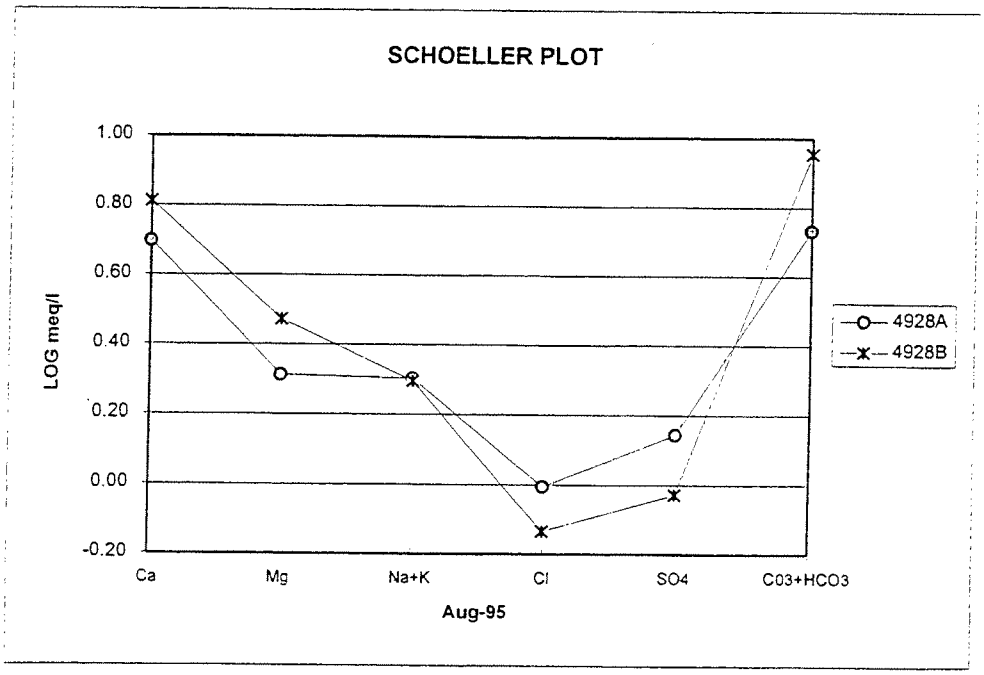
JOB 20111-2-0346 DATE 1-25-96 F.T. _____ DR. _____ O.E. SCA CHKD WJO



LAW/CRANDALL, INC.

FIGURE 4

JOB 70111-2-0346 DATE 1-25-96 F.T. _____ DR. _____ O.E. SCS CHKD WJO



LAW/CRANDALL, INC.

FIGURE 5

APPENDIX A

GROUNDWATER DATABASE

JOB 70111-2-0346 DATE 1/25/96 F.T. _____ DR. _____ O.E. SCB CHKD WJO

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
4928A	31-Dec-84								560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
4928A	19-Jun-85		549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
4928A	17-Jul-85		547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
4928A	14-Aug-85		546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
4928A	19-Sep-85		543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
4928A	16-Jan-86		538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
4928A	29-Apr-86		539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
4928A	22-Jul-86		541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
4928A	15-Oct-86		539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
4928A	14-Jan-87		538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
4928A	15-Apr-87		536.86	5.8	69	1100	42.5	490	1500	8.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
4928A	24-Jul-87	803.1	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
4928A	21-Oct-87		526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
4928A	29-Apr-88		518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
4928A	28-Jul-88		518.82	7.4	67	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
4928A	08-Nov-88		511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
4928A	19-Nov-93		515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
4928A	21-Feb-94		519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.3	0.26	530			
4928A	05-Aug-94		526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21	0.26	0.48	490			
4928A	20-Feb-95		510.49	NA	NA	NA	NA	NA	830	6.9	97	25	36	5.3	<0.6	390	67	34	34	<0.05	0.41	530	21		
4928A	24-Aug-95		524.22	7.0	68	650	100	386	900	6.9	100	25	43	5.4	<10	330	67	35	42	0.29	0.19	560	<6		

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JOB 70111-2-0346 DATE 1/25/96 F.T. _____ DR. _____ O.E. SCB CHKD WJO

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)													LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001		0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84	44	5.3									<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<1	1	3								<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	<1	1	2								<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85											<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	37	2	2								<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<1	1	2								<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86	<1	<1	<1								<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	<1	2	<1								<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01		<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01		<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01		<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02		<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02		<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02		<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001		<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001		<0.02	0.2	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001		<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001		<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
4928A	05-Aug-94	<0.5	1.6	<0.5	<0.5	<0.5	<0.05			<0.003		<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C
4928A	20-Feb-95	<0.5	1.9	<0.5	<0.5	<0.5	0.28			<0.005	<0.01	0.056	7.8		0.17	0.099	<0.04		5.2	B&C
4928A	24-Aug-95	<0.2	2.5	<0.2	<0.2	<0.2	<0.1			<0.005	<0.01	0.082	0.35		0.013	0.010	0.073		1.5	B&C

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JOB 70111-2-0346 DATE 1/25/96 F.T. _____ DR. _____ O.E. SCS CHKD WJO

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		WATER LEV (ft.)		FIELD MEAS. (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
4928B	23-Oct-84	823.1							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
4928B	19-Jun-85		552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
4928B	17-Jul-85		551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
4928B	14-Aug-85		550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
4928B	19-Sep-85		547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
4928B	16-Jan-86		541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
4928B	29-Apr-86		542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
4928B	22-Jul-86		545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
4928B	15-Oct-86		543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
4928B	14-Jan-87		541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
4928B	15-Apr-87		539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
4928B	24-Jul-87		535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
4928B	21-Oct-87		529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
4928B	29-Apr-88	823.17	523.37	8.6	66	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
4928B	28-Jul-88		521.77	7.4	68	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
4928B	08-Nov-88		515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
4928B	07-Feb-89		511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
		823.09																							
4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
4928B	21-Feb-94		522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
4928B	05-Aug-94		528.93	7.0	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			
4928B	20-Feb-95		511.51	7.4	74	1000	NA	NA	970	7.1	120	34	39	5.5	<0.6	550	32	38	<0.1	<0.05	0.44	580	6.9		
4928B	24-Aug-95		527.45	7.0	72	800	137	524	1100	7.0	130	36	42	5.9	<10	550	45	26	30	<0.2	0.15	610	<6		

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JOB 70111-2-0346 DATE 1/25/96 F.T. _____ DR. _____ O.E. SLS CHKD WJO

STRATHERN LANDFILL

GROUND WATER DATABASE

PROJECT NO. 70111-2-0346

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)												LAB
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
4928B	23-Oct-84		4									<0.06	<0.08		2 200				0.082	B&C
4928B	19-Jun-85	<1	<1	<1								<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	<1	<1	3								<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85											<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<1	3	<1								<0 035	<0.042		2.400				0 067	B&C
4928B	16-Jan-86	<1	<1	<1								<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86	<1	1	<1								<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	<1	3	<1								<0.02	<0.2		1.100				0 050	B&C
4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01		<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01		<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01		<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02		<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02		<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02		<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001		<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
4928B	08-Nov-88	<1	4	<1	<1	<1	<0 2	<0.02	<0.002	<0.001		<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001		<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005		<0.02	0.82	<0.0002	0.064	0.049	<0.04	<0.004	3.5	B&C
4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001		<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001		<0.02	17	<0.0002	0.4	0.018	<0.04	<0.004	4.6	B&C
4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.1			<0.001		<0.02	82		3.8	0.003	<0.04		3.0	B&C
4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.5			<0.001		<0.02	87		2.70	0.013	<0.04		4.0	B&C
4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003		<0.03	7.9		1.30	0.017	<0.005		1.2	B&C
4928B	20-Feb-95	2.7	<0.5	<0.5	<0.5	<0.5				<0.005	<0.01	<0.02	2.4		0.22	0.016	<0.04		4.8	B&C
4928B	24-Aug-95	1.3	4.8	<0.2	0.26	<0.2	0.11			<0.005	<0.01	0.067	18		0.31	0.014	<0.04		2.0	B&C

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APPENDIX B

GROUNDWATER CONTOUR MAPS

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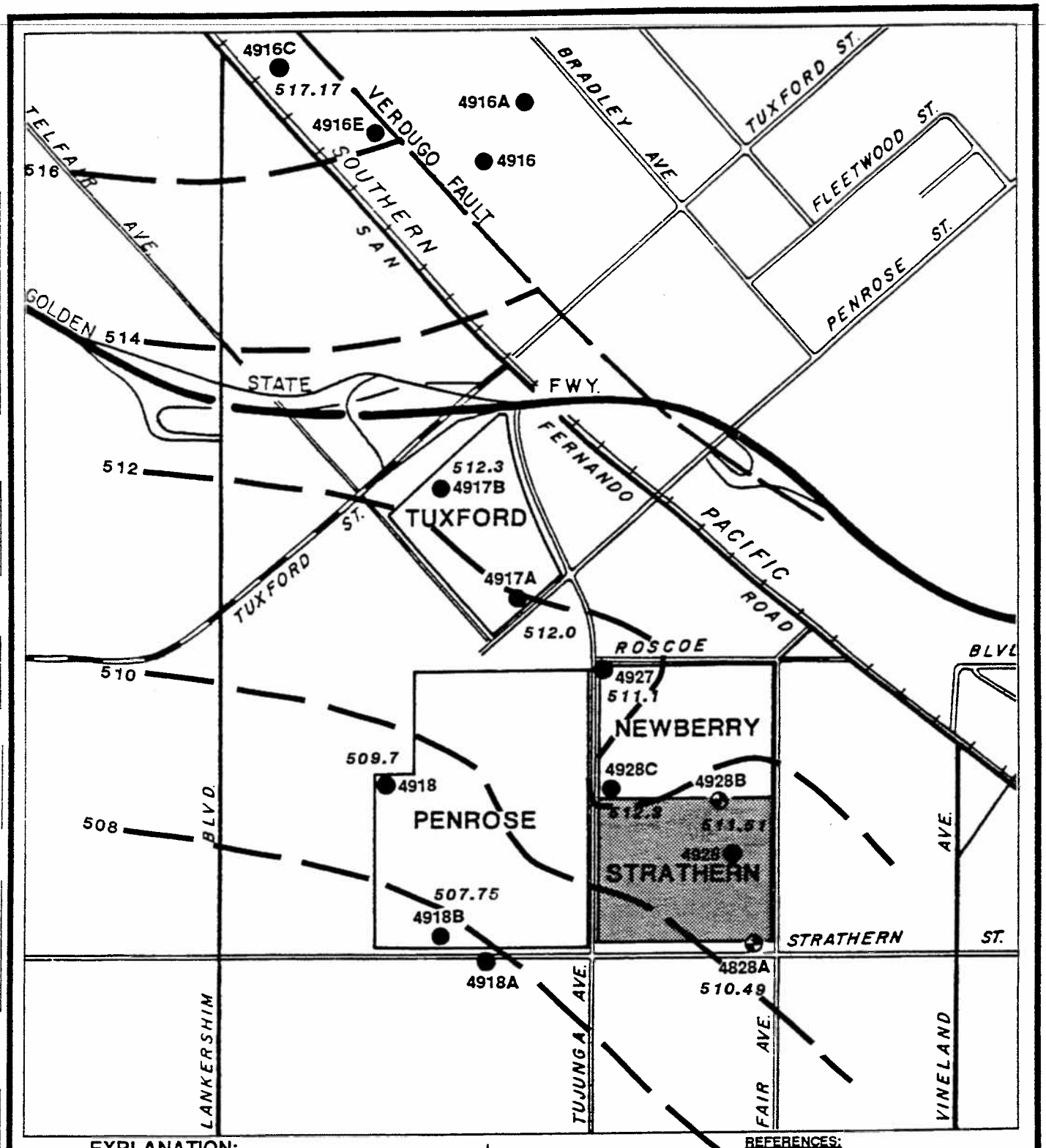

JOB 2702.20346.0001 DATE 4/11/95 F.T. DR. MN O.E. CHKD

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 517.17 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000
SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

FEBRUARY, 1995

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

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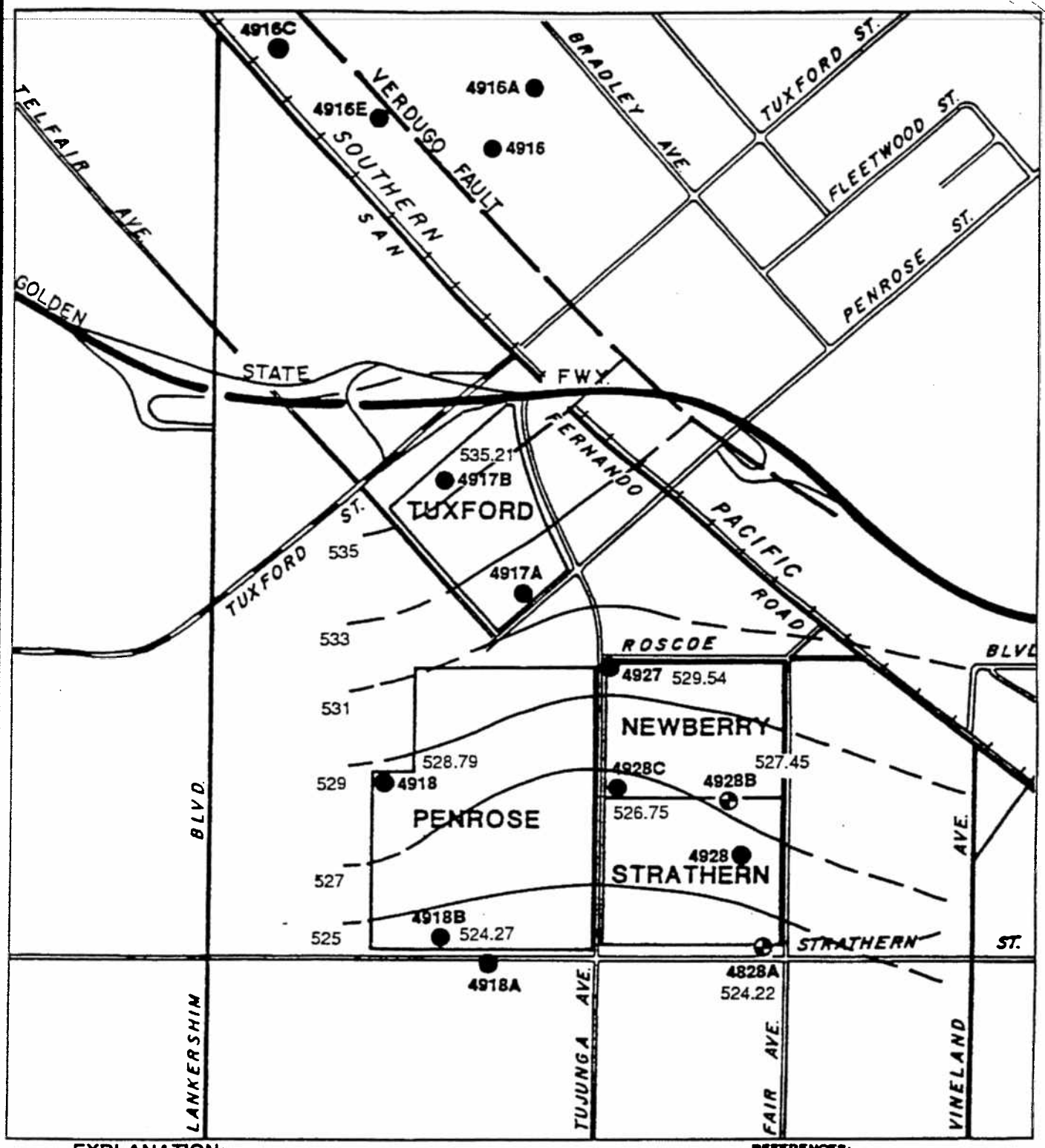

JOB 2702.20346.0001 DATE 10/21/94 DR. MN O.E. CHKD WJO

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 529.54 — GROUND WATER SURFACE ELEVATION IN FEET ASL
- 529 — LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST 1995

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

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APPENDIX C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain-of-Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and

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time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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APPENDIX D

RESULTS OF LABORATORY ANALYSIS

AND

CHAIN-OF-CUSTODY RECORD

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G95-02-311

Received: 21 FEB 95

Mailed: MAR - 6 1995

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Halocarbons/EPA 8010		
Date Analyzed	02/23/95	02/23/95
Date Confirmed	02/23/95	02/23/95
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	1.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.80
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	2.7
Trichlorofluoromethane, ug/L	<0.5	<0.5

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801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-02-311

Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Tetrachloroethene, ug/L	1.9	<0.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5
EPA 8020		
Date Analyzed	02/23/95	02/23/95
Date Confirmed	02/23/95	02/23/95
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	1.2
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	320	450
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	320	450
Calcium (6010/200.7), mg/L	97	120
Magnesium (6010/200.7), mg/L	25	34
Chloride (325.3), mg/L	34	38
Copper (6010/200.7), mg/L	0.056	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010/200.7), mg/L	7.8	2.4
Manganese (6010/200.7), mg/L	0.17	0.22
pH (150.1/9040), Units	6.9	7.1
Potassium (6010/200.7), mg/L	5.3	5.5
Sodium (6010/200.7), mg/L	36	39
Sulfate, mg/L	67	32
Conductivity (120.1), umhos/cm	830	970
Dissolved Solids (160.1), mg/L	530	580
Zinc (6010/200.7), mg/L	5.2	4.8
Ion Balance, Percent	3.94	0.79

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	4928A	20 FEB 95
02-311-2	4928B	20 FEB 95

PARAMETER	02-311-1	02-311-2
Nitrate+Nitrite		
Nitrate+Nitrite (as NO3), mg/L	34	<0.1
Nitrate+Nitrite (as N), mg/L	7.6	<0.03
Digestion (3010), Date	03/02/95	03/02/95
Aluminum (6010/200.7), mg/L	0.28	<0.1
Fluoride, mg/L	0.41	0.44
COD (410.4), mg/L	21	6.9
Boron (6010/200.7), mg/L	<0.05	<0.05
Cadmium (6010/200.7), mg/L	<0.005	<0.005
Chromium (6010/200.7), mg/L	<0.01	<0.01
Lead (7421/239.2), mg/L	0.099	0.016
Nickel (6010/200.7), mg/L	<0.04	<0.04
Furnace Digestion (3020), Date	02/27/95	02/27/95

Linda Geddes for MAV

Mark A. Valentini, PhD, Laboratory Director

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LOG NO: G95-02-311

Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 95-02-311-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 20 FEB 95

Anions	mg/L	meq/L
Nitrate+Nitrite (as NO3)	34	0.55
Chloride (325.3)	34	0.96
Sulfate	67	1.4
Bicarbonate (as HCO3)	390	6.4
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		9.4

Cations	mg/L	meq/L
Magnesium (6010/200.7)	25	2.1
Sodium (6010/200.7)	36	1.6
Potassium (6010/200.7)	5.3	0.14
Calcium (6010/200.7)	97	4.8
Total Millequivalents per Liter		8.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	320
Ca Hardness (as CaCO3)	240
Mg Hardness (as CaCO3)	100
Total Hardness	340
Iron (6010/200.7)	7.8
Manganese (6010/200.7)	0.17
Copper (6010/200.7)	0.056
Zinc (6010/200.7)	5.2
Surfactants, MBAS (425.1)	<0.1
Dissolved Solids (160.1)	530
Sp. Conductance, umhos/cm	830
pH (150.1/9040), units	6.9
Ion balance in percent	3.94

* Conforms to Title 22, California Administrative Code

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-02-311

Received: 21 FEB 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 95-02-311-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 20 FEB 95

Anions	mg/L	meq/L
Nitrate+Nitrite (as NO3)	<0.1	<0.0016
Chloride (325.3)	38	1.1
Sulfate	32	0.67
Bicarbonate (as HCO3)	550	9
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		10.8

Cations	mg/L	meq/L
Magnesium (6010/200.7)	34	2.8
Sodium (6010/200.7)	39	1.7
Potassium (6010/200.7)	5.5	0.14
Calcium (6010/200.7)	120	6
Total Millequivalents per Liter		10.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	450
Ca Hardness (as CaCO3)	300
Mg Hardness (as CaCO3)	140
Total Hardness	440
Iron (6010/200.7)	2.4
Manganese (6010/200.7)	0.22
Copper (6010/200.7)	<0.02
Zinc (6010/200.7)	4.8
Surfactants, MBAS (425.1)	<0.1
Dissolved Solids (160.1)	580
Sp. Conductance, umhos/cm	970
pH (150.1/9040), units	7.1
Ion balance in percent	0.79

* Conforms to Title 22, California Administrative Code

Linda Haddix for MAV
Mark A. Valentini, PhD, Laboratory Director

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ORDER QC REPORT FOR G9502311

ATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane	02.23.95	9515	54.1	50.0	ug/L	108
1,1,2,2-Tetrachloroethane	02.23.95	9515	48.9	50.0	ug/L	98
1,1,2-Trichloroethane	02.23.95	9515	51.9	50.0	ug/L	104
1,1-Dichloroethane	02.23.95	9515	53.7	50.0	ug/L	107
1,1-Dichloroethene	02.23.95	9515	56.4	50.0	ug/L	113
1,2-Dichloroethane	02.23.95	9515	54.5	50.0	ug/L	109
1,2-Dichlorobenzene	02.23.95	9515	50.1	50.0	ug/L	100
1,2-Dichloropropane	02.23.95	9515	53.7	50.0	ug/L	107
1,3-Dichlorobenzene	02.23.95	9515	50.3	50.0	ug/L	101
1,4-Dichlorobenzene	02.23.95	9515	51.9	50.0	ug/L	104
Bromodichloromethane	02.23.95	9515	50.6	50.0	ug/L	101
Bromomethane	02.23.95	9515	58.5	50.0	ug/L	117
Bromoform	02.23.95	9515	38.0	50.0	ug/L	76
Chlorobenzene	02.23.95	9515	53.7	50.0	ug/L	107
Carbon Tetrachloride	02.23.95	9515	53.7	50.0	ug/L	107
Chloroethane	02.23.95	9515	55.5	50.0	ug/L	111
Chloroform	02.23.95	9515	55.3	50.0	ug/L	111
Chloromethane	02.23.95	9515	31.0	50.0	ug/L	62
Dibromochloromethane	02.23.95	9515	47.3	50.0	ug/L	95
Freon 113	02.23.95	9515	54.2	50.0	ug/L	108
Methylene chloride	02.23.95	9515	52.6	50.0	ug/L	105
Trichloroethene	02.23.95	9515	54.5	50.0	ug/L	109
Trichlorofluoromethane	02.23.95	9515	57.2	50.0	ug/L	114
Tetrachloroethene	02.23.95	9515	56.3	50.0	ug/L	113
Vinyl chloride	02.23.95	9515	50.1	50.0	ug/L	100
cis-1,2-Dichloroethene	02.23.95	9515	53.6	50.0	ug/L	107
cis-1,3-Dichloropropene	02.23.95	9515	52.2	50.0	ug/L	104
trans-1,2-Dichloroethene	02.23.95	9515	53.4	50.0	ug/L	107
trans-1,3-Dichloropropene	02.23.95	9515	50.4	50.0	ug/L	101
2. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane	02.23.95	9515	48.8	50.0	ug/L	98
1,1,2,2-Tetrachloroethane	02.23.95	9515	47.6	50.0	ug/L	95
1,1,2-Trichloroethane	02.23.95	9515	50.2	50.0	ug/L	100
1,1-Dichloroethane	02.23.95	9515	48.2	50.0	ug/L	96
1,1-Dichloroethene	02.23.95	9515	49.4	50.0	ug/L	99
1,2-Dichloroethane	02.23.95	9515	49.6	50.0	ug/L	99
1,2-Dichlorobenzene	02.23.95	9515	48.7	50.0	ug/L	97
1,2-Dichloropropane	02.23.95	9515	50.1	50.0	ug/L	100
1,3-Dichlorobenzene	02.23.95	9515	50.0	50.0	ug/L	100
1,4-Dichlorobenzene	02.23.95	9515	50.8	50.0	ug/L	102

BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Bromodichloromethane	02.23.95	9515	48.7	50.0	ug/L	97
Bromomethane	02.23.95	9515	73.6	50.0	ug/L	147
Bromoform	02.23.95	9515	42.8	50.0	ug/L	86
Chlorobenzene	02.23.95	9515	50.2	50.0	ug/L	100
Carbon Tetrachloride	02.23.95	9515	48.5	50.0	ug/L	97
Chloroethane	02.23.95	9515	65.8	50.0	ug/L	132
Chloroform	02.23.95	9515	49.2	50.0	ug/L	98
Chloromethane	02.23.95	9515	33.5	50.0	ug/L	67
Dibromochloromethane	02.23.95	9515	48.7	50.0	ug/L	97
Freon 113	02.23.95	9515	46.9	50.0	ug/L	94
Methylene chloride	02.23.95	9515	48.4	50.0	ug/L	97
Trichloroethene	02.23.95	9515	50.3	50.0	ug/L	101
Trichlorofluoromethane	02.23.95	9515	49.3	50.0	ug/L	99
Tetrachloroethene	02.23.95	9515	51.7	50.0	ug/L	103
Vinyl chloride	02.23.95	9515	48.3	50.0	ug/L	97
cis-1,2-Dichloroethene	02.23.95	9515	48.4	50.0	ug/L	97
cis-1,3-Dichloropropene	02.23.95	9515	50.9	50.0	ug/L	102
trans-1,2-Dichloroethene	02.23.95	9515	47.9	50.0	ug/L	96
trans-1,3-Dichloropropene	02.23.95	9515	49.2	50.0	ug/L	98
3. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene	02.23.95	9515	49.0	50.0	ug/L	98
1,3-Dichlorobenzene	02.23.95	9515	50.1	50.0	ug/L	100
1,4-Dichlorobenzene	02.23.95	9515	48.8	50.0	ug/L	98
Benzene	02.23.95	9515	52.0	50.0	ug/L	104
Chlorobenzene	02.23.95	9515	50.0	50.0	ug/L	100
Ethylbenzene	02.23.95	9515	52.5	50.0	ug/L	105
Toluene	02.23.95	9515	51.9	50.0	ug/L	104
Total Xylene Isomers	02.23.95	9515	155	150	ug/L	103
4. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed	02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene	02.23.95	9515	47.6	50.0	ug/L	95
1,3-Dichlorobenzene	02.23.95	9515	48.4	50.0	ug/L	97
1,4-Dichlorobenzene	02.23.95	9515	48.8	50.0	ug/L	98
Benzene	02.23.95	9515	49.5	50.0	ug/L	99
Chlorobenzene	02.23.95	9515	47.9	50.0	ug/L	96
Ethylbenzene	02.23.95	9515	51.3	50.0	ug/L	103
Toluene	02.23.95	9515	49.4	50.0	ug/L	99
Total Xylene Isomers	02.23.95	9515	148	150	ug/L	99
5. Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	02.22.95	959	601	596	mg/L	101
Total Alkalinity (as CaCO3)	02.22.95	959	601	596	mg/L	101
5. Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	02.22.95	959	596	596	mg/L	100

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Total Alkalinity (as CaCO3)	02.22.95	959	596	596	mg/L	100
7. Calcium (6010/200.	03.03.95	95273	46.0	50.0	mg/L	92
8. Magnesium (6010/20	03.03.95	95273	46.5	50.0	mg/L	93
9. Chloride (325.3)	02.21.95	950221	12.0	12.5	mg/L	96
10. Chloride (325.3)	02.21.95	950221	12.1	12.5	mg/L	97
11. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
12. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
13. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
14. Chloride (325.3)	02.21.95	950221	12.4	12.5	mg/L	99
15. Copper (6010/200.7	03.03.95	95273	0.838	1.00	mg/L	84
16. Surfactants, MBAS	02.21.95	9517	0.974	1.00	mg/L	97
17. Surfactants, MBAS	02.21.95	9517	0.962	1.00	mg/L	96
18. Iron (6010/200.7)	03.03.95	95273	4.64	5.00	mg/L	93
19. Manganese (6010/20	03.03.95	95273	0.856	1.00	mg/L	86
20. pH (150.1/9040)	02.21.95	9575	6.01	6.00	Units	100
21. pH (150.1/9040)	02.21.95	9575	6.00	6.00	Units	100
22. Potassium (6010/20	03.03.95	95273	45.1	50.0	mg/L	90
23. Sodium (6010/200.7	03.03.95	95273	45.6	50.0	mg/L	91
24. Sulfate	02.21.95	950221	23.6	25.0	mg/L	94
25. Sulfate	02.21.95	950221	23.7	25.0	mg/L	95
26. Sulfate	02.21.95	950221	24.6	25.0	mg/L	98
27. Sulfate	02.21.95	950221	24.3	25.0	mg/L	97
28. Sulfate	02.21.95	950221	27.2	25.0	mg/L	109
29. Sulfate	02.21.95	950221	24.3	25.0	mg/L	97
30. Conductivity (120.	02.27.95	9514	1400	1410	umhos/cm	99
31. Conductivity (120.	02.27.95	9514	1400	1410	umhos/cm	99
32. Dissolved Solids (	02.23.95	9515	1010	1000	mg/L	101
33. Dissolved Solids (	02.23.95	9515	1010	1000	mg/L	101
34. Zinc (6010/200.7)	03.03.95	95273	0.995	1.00	mg/L	100
35. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	24.0	25.0	mg/L	96
Nitrate+Nitrite (as N)	02.21.95	950221	5.42	5.64	mg/L	96
36. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	24.1	25.0	mg/L	96
Nitrate+Nitrite (as N)	02.21.95	950221	5.44	5.64	mg/L	96
37. Aluminum (6010/200	03.03.95	95273	4.12	5.00	mg/L	82
38. Fluoride	02.21.95	950221	5.19	5.00	mg/L	104
39. Fluoride	02.21.95	950221	5.18	5.00	mg/L	104
40. COD (410.4)	02.21.95	9518	90.2	100	mg/L	90
41. COD (410.4)	02.21.95	9518	94.2	100	mg/L	94
42. Boron (6010/200.7)	02.27.95	95259	0.899	1.00	mg/L	90
43. Cadmium (6010/200.	03.03.95	95273	0.977	1.00	mg/L	98
44. Chromium (6010/200	03.03.95	95273	0.884	1.00	mg/L	88
45. Lead (7421/239.2)	03.02.95	95255	0.0485	0.0500	mg/L	97
46. Nickel (6010/200.7	03.03.95	95273	0.852	1.00	mg/L	85

BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

ADDITIONAL LCS PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
1. Halocarbons/EPA 8010							
Date Analyzed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,1,1-Trichloroethane		02.23.95	9515	54.1	48.8	ug/L	10
1,1,2,2-Tetrachloroethane		02.23.95	9515	48.9	47.6	ug/L	3
1,1,2-Trichloroethane		02.23.95	9515	51.9	50.2	ug/L	3
1,1-Dichloroethane		02.23.95	9515	53.7	48.2	ug/L	11
1,1-Dichloroethene		02.23.95	9515	56.4	49.4	ug/L	13
1,2-Dichloroethane		02.23.95	9515	54.5	49.6	ug/L	9
1,2-Dichlorobenzene		02.23.95	9515	50.1	48.7	ug/L	3
1,2-Dichloropropane		02.23.95	9515	53.7	50.1	ug/L	7
1,3-Dichlorobenzene		02.23.95	9515	50.3	50.0	ug/L	1
1,4-Dichlorobenzene		02.23.95	9515	51.9	50.8	ug/L	2
Bromodichloromethane		02.23.95	9515	50.6	48.7	ug/L	4
Bromomethane		02.23.95	9515	58.5	73.6	ug/L	23
Bromoform		02.23.95	9515	38.0	42.8	ug/L	12
Chlorobenzene		02.23.95	9515	53.7	50.2	ug/L	7
Carbon Tetrachloride		02.23.95	9515	53.7	48.5	ug/L	10
Chloroethane		02.23.95	9515	55.5	65.8	ug/L	17
Chloroform		02.23.95	9515	55.3	49.2	ug/L	12
Chloromethane		02.23.95	9515	31.0	33.5	ug/L	8
Dibromochloromethane		02.23.95	9515	47.3	48.7	ug/L	3
Freon 113		02.23.95	9515	54.2	46.9	ug/L	14
Methylene chloride		02.23.95	9515	52.6	48.4	ug/L	8
Trichloroethene		02.23.95	9515	54.5	50.3	ug/L	8
Trichlorofluoromethane		02.23.95	9515	57.2	49.3	ug/L	15
Tetrachloroethene		02.23.95	9515	56.3	51.7	ug/L	9
Vinyl chloride		02.23.95	9515	50.1	48.3	ug/L	4
cis-1,2-Dichloroethene		02.23.95	9515	53.6	48.4	ug/L	10
cis-1,3-Dichloropropene		02.23.95	9515	52.2	50.9	ug/L	3
trans-1,2-Dichloroethene		02.23.95	9515	53.4	47.9	ug/L	11
trans-1,3-Dichloropropene		02.23.95	9515	50.4	49.2	ug/L	2
2. EPA 8020							
Date Analyzed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
Date Confirmed		02.23.95	9515	02/23/95	02/23/95	Date	N/A
1,2-Dichlorobenzene		02.23.95	9515	49.0	47.6	ug/L	3
1,3-Dichlorobenzene		02.23.95	9515	50.1	48.4	ug/L	3
1,4-Dichlorobenzene		02.23.95	9515	48.8	48.8	ug/L	0
Benzene		02.23.95	9515	52.0	49.5	ug/L	5
Chlorobenzene		02.23.95	9515	50.0	47.9	ug/L	4
Ethylbenzene		02.23.95	9515	52.5	51.3	ug/L	2
Toluene		02.23.95	9515	51.9	49.4	ug/L	5
Total Xylene Isomers		02.23.95	9515	155	148	ug/L	5
3. Alkalinity (310.1)							
Carbonate Alk (as CaCO3)		02.22.95	959	<1	<1	mg/L	NA

BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

ADDITIONAL LCS PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
Bicarbonate Alk (as CaCO3)		02.22.95	959	601	596	mg/L	1
Hydroxide Alk (as CaCO3)		02.22.95	959	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)		02.22.95	959	601	596	mg/L	1
4. Chloride (325.3)		02.21.95	950221	12.0	12.1	mg/L	1
5. Surfactants, MBAS		02.21.95	9517	0.974	0.962	mg/L	1
6. pH (150.1/9040)		02.21.95	9575	6.01	6.00	Units	0
7. Sulfate		02.21.95	950221	23.6	23.7	mg/L	0
8. Conductivity (120.		02.27.95	9514	1400	1400	umhos/cm	0
9. Dissolved Solids (		02.23.95	9515	1010	1010	mg/L	0
10. Nitrate+Nitrite							
Nitrate+Nitrite (as NO3)		02.21.95	950221	24.0	24.1	mg/L	0
Nitrate+Nitrite (as N)		02.21.95	950221	5.42	5.44	mg/L	0
11. Fluoride		02.21.95	950221	5.19	5.18	mg/L	0
12. COD (410.4)		02.21.95	9518	90.2	94.2	mg/L	4

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ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER
(DRY WEIGHT CORRECTED)

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE % DIFF
1. pH (150.1/9040)		02.21.95	9575	6.9	6.9	Units	0

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ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC PRECISION (DUPLICATE SPIKES)
FOR SAMPLES ON THIS ORDER
(DRY WEIGHT CORRECTED)

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. Chloride (325.3)		02.21.95	950221	227	225	mg/L	1
2. Surfactants, MBAS		02.21.95	9517	0.787	1.10	mg/L	33
3. Sulfate		02.21.95	950221	443	440	mg/L	1
4. Nitrate+Nitrite							
Nitrate+Nitrite (as NO3)		02.21.95	950221	50.6	50.3	mg/L	1
Nitrate+Nitrite (as N)		02.21.95	950221	11.4	11.3	mg/L	1
5. Fluoride		02.21.95	950221	4.62	4.56	mg/L	1
6. Alkalinity (310.1)							
Bicarbonate Alk (as CaCO3)		02.22.95	959	930	940	mg/L	1
Total Alkalinity (as CaCO3)		02.22.95	959	930	940	mg/L	1

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ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

MATRIX QC ACCURACY (SPIKES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
1. Chloride (325.3)		02.21.95	950221	226	34	234	mg/L	96
2. Surfactants, MBAS		02.21.95	9517	0.9435	<0.1	1.00	mg/L	94
3. Sulfate		02.21.95	950221	441.5	67	467	mg/L	94
4. Nitrate+Nitrite								
Nitrate+Nitrite (as NO3)		02.21.95	950221	50.45	34	49.6	mg/L	NC
Nitrate+Nitrite (as N)		02.21.95	950221	11.35	7.6	11.2	mg/L	NC
5. Fluoride		02.21.95	950221	4.59	0.41	4.41	mg/L	105
6. Alkalinity (310.1)								
Bicarbonate Alk (as CaCO3)		02.22.95	959	935	450	922	mg/L	103
Total Alkalinity (as CaCO3)		02.22.95	959	935	450	922	mg/L	103

BC ANALYTICAL

ORDER QC REPORT FOR G9502311

)ATE REPORTED : 03/06/95

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1. Halocarbons/EPA 8010						
Date Analyzed	02.23.95	9515	02/23/95	NA	Date	8010
1,1,1-Trichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1,2,2-Tetrachloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1,2-Trichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1-Dichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,1-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichloroethane	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
1,2-Dichloropropane	02.23.95	9515	0	0.5	ug/L	8010
1,3-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
1,4-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
Bromodichloromethane	02.23.95	9515	0	0.5	ug/L	8010
Bromomethane	02.23.95	9515	0	0.5	ug/L	8010
Bromoform	02.23.95	9515	0	0.5	ug/L	8010
Chlorobenzene	02.23.95	9515	0	0.5	ug/L	8010
Carbon Tetrachloride	02.23.95	9515	0	0.5	ug/L	8010
Chloroethane	02.23.95	9515	0	0.5	ug/L	8010
Chloroform	02.23.95	9515	0	0.5	ug/L	8010
Chloromethane	02.23.95	9515	0	0.5	ug/L	8010
Dibromochloromethane	02.23.95	9515	0	0.5	ug/L	8010
Freon 113	02.23.95	9515	0	0.5	ug/L	8010
Methylene chloride	02.23.95	9515	0.089	0.5	ug/L	8010
Trichloroethene	02.23.95	9515	0	0.5	ug/L	8010
Trichlorofluoromethane	02.23.95	9515	0	0.5	ug/L	8010
Tetrachloroethene	02.23.95	9515	0	0.5	ug/L	8010
Vinyl chloride	02.23.95	9515	0	0.5	ug/L	8010
cis-1,2-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
cis-1,3-Dichloropropene	02.23.95	9515	0	0.5	ug/L	8010
trans-1,2-Dichloroethene	02.23.95	9515	0	0.5	ug/L	8010
trans-1,3-Dichloropropene	02.23.95	9515	0	0.5	ug/L	8010
2. EPA 8020						
Date Analyzed	02.23.95	9515	02/23/95	NA	Date	8020
1,2-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
1,3-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
1,4-Dichlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
Benzene	02.23.95	9515	0	0.5	ug/L	8020
Chlorobenzene	02.23.95	9515	0	0.5	ug/L	8020
Ethylbenzene	02.23.95	9515	0	0.5	ug/L	8020
Toluene	02.23.95	9515	0	0.5	ug/L	8020
Total Xylene Isomers	02.23.95	9515	0	1	ug/L	8020
3. Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
Bicarbonate Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	02.22.95	959	0	10	mg/L	310.1

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BC ANALYTICAL

ORDER QC REPORT FOR G9502311

DATE REPORTED : 03/06/95

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Total Alkalinity (as CaCO3)	02.22.95	959	0	10	mg/L	310.1
4. Calcium (6010/200.	03.02.95	95273	0.090	0.5	mg/L	6010
5. Magnesium (6010/20	03.02.95	95273	0	0.1	mg/L	6010
6. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
7. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
8. Chloride (325.3)	02.21.95	950221	0	NA	mg/L	300.0
9. Copper (6010/200.7	03.02.95	95273	0	0.02	mg/L	6010
10. Surfactants, MBAS	02.21.95	9517	0	0.1	mg/L	425.1
11. Iron (6010/200.7)	03.02.95	95273	0.0333	0.04	mg/L	6010
12. Manganese (6010/20	03.02.95	95273	0	0.01	mg/L	6010
13. Potassium (6010/20	03.02.95	95273	0.115	0.5	mg/L	6010
14. Sodium (6010/200.7	03.02.95	95273	0.071	0.5	mg/L	6010
15. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
16. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
17. Sulfate	02.21.95	950221	0	NA	mg/L	300.0
18. Dissolved Solids (	02.23.95	9515	3	10	mg/L	160.1
19. Zinc (6010/200.7)	03.02.95	95273	0	0.01	mg/L	6010
20. Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	02.21.95	950221	0	NA	mg/L	300.0
Nitrate+Nitrite (as N)	02.21.95	950221	0	NA	mg/L	300.0
21. Aluminum (6010/200	03.02.95	95273	0.078	0.1	mg/L	6010
22. Fluoride	02.21.95	950221	0	NA	mg/L	300.0
23. COD (410.4)	02.21.95	9518	0	6		410.4
24. Boron (6010/200.7)	02.27.95	95259	0	0.05	mg/L	6010
25. Cadmium (6010/200.	03.02.95	95273	0	0.005	mg/L	6010
26. Chromium (6010/200	03.02.95	95273	0	0.01	mg/L	6010
27. Lead (7421/239.2)	03.02.95	95255	0	0.002	mg/L	7421
28. Nickel (6010/200.7	03.02.95	95273	0	0.04	mg/L	6010

CHAIN OF CUSTODY RECORD

BCA Log Number G15-Con-3

Client name: Low & Kandell	Project or PO#: 7707.20346	
Address: 200 Castro St.	Phone #: (213) 889-5500	
City, State, Zip: LA CA 90016	Report attention: Bill Olson 889-5515	

311

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	Analyses required: G.N.M.N.	CCCL, N. 6010	Pb	B	601/602	COD	Hazardous sample / Special handling required	Remarks
	2-20-95	1250	GW	4928A	3	✓	✓	✓	✓	✓	✓		Send Bill to:
	2-20-95	1300	GW	4928B	6	✓	✓	✓	✓	✓	✓		CA By-Products
													ATTN: Mike McAllister
													[illegible]

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	Paul L. Scroggins	L&K/CKandell	2-21-95	
Received by	Sharon Malone	Sharon Malone	BC Analytical	2-21-95	1100
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum

004051

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G95-08-437

Received: 24 AUG 95

Mailed: SEP 12

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-437-1	4928A	24 AUG 95
08-437-2	4928B	24 AUG 95

PARAMETER	08-437-1	08-437-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	<10
Bicarbonate Alk (as CaCO3), mg/L	330	550
Hydroxide Alk (as CaCO3), mg/L	<10	<10
Total Alkalinity (as CaCO3), mg/L	330	550
Calcium (6010), mg/L	100	130
Magnesium (6010), mg/L	25	36
Chloride (300.0), mg/L	35	26
Copper (6010), mg/L	0.082	0.067
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.35	18
Manganese (6010), mg/L	0.013	0.31
pH (150.1), Units	6.9	7.0
Potassium (6010), mg/L	5.4	5.9
Sodium (6010), mg/L	43	42
Sulfate (300.0), mg/L	67	45
Conductivity (120.1), umhos/cm	900	1100
Dissolved Solids (160.1), mg/L	560	610
Zinc (6010), mg/L	1.5	2.0
Ion Balance (CALC), Percent	2.8	6.9
Nitrate+Nitrite (300.0)		
Nitrate+Nitrite (as NO3), mg/L	42	30
Nitrate+Nitrite (as N), mg/L	9.5	6.8
Digestion (3010), Date	09/05/95	09/05/95
Aluminum (6010), mg/L	<0.1	0.11
Fluoride (340.2), mg/L	0.19	0.15
COD (410.4), mg/L	<6	<6

BCA

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-08-437

Received: 24 AUG 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-437-1	4928A	24 AUG 95
08-437-2	4928B	24 AUG 95

PARAMETER	08-437-1	08-437-2			
Boron (6010), mg/L	0.29	<0.2			
Cadmium (6010), mg/L	<0.005	<0.005			
Chromium (6010), mg/L	<0.01	<0.01			
Lead (7421), mg/L	0.010	0.014			
Nickel (6010), mg/L	0.073	<0.04			
Furnace Digestion (3020), Date	09/05/95	09/05/95			

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-08-437

Received: 24 AUG 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-437-1	4928A	24 AUG 95
08-437-2	4928B	24 AUG 95

PARAMETER	08-437-1	08-437-2
E524.2/VOC (524.2)		
Date Analyzed	08/26/95	08/28/95
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	<0.2	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<0.2
1,1-Dichloroethane, ug/L	<0.2	4.0
1,1-Dichloroethene, ug/L	<0.2	0.26
1,1-Dichloropropene, ug/L	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5
1,2-Dibromoethane, ug/L	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	0.56
1,2-Dichloropropane, ug/L	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	0.21
2,2-Dichloropropane, ug/L	<0.2	<0.2
2-Chlorotoluene, ug/L	<0.2	<0.2
4-Chlorotoluene, ug/L	<0.2	<0.2

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-08-437

Received: 24 AUG 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-437-1	4928A	24 AUG 95
08-437-2	4928B	24 AUG 95

PARAMETER	08-437-1	08-437-2
Bromobenzene, ug/L	<0.2	<0.2
Bromochloromethane, ug/L	<0.2	<0.2
Bromodichloromethane, ug/L	<0.2	<0.2
Bromomethane, ug/L	<0.5	<0.5
Benzene, ug/L	<0.2	<0.2
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.2	<0.2
Carbon Tetrachloride, ug/L	<0.2	<0.2
Chloroethane, ug/L	<0.2	<0.2
Chloroform, ug/L	<0.2	<0.2
Chloromethane, ug/L	<0.5	0.59
Dibromochloromethane, ug/L	<0.2	<0.2
Dibromomethane, ug/L	<0.2	<0.2
Dichlorodifluoromethane, ug/L	5.2	6.8
Ethylbenzene, ug/L	<0.2	<0.2
Freon 113, ug/L	<0.2	<0.2
Hexachlorobutadiene, ug/L	<0.2	<0.2
Isopropylbenzene, ug/L	<0.2	<0.2
Methylene chloride, ug/L	<1	5.9
N-Butylbenzene, ug/L	<0.2	<0.2
N-Propylbenzene, ug/L	<0.2	<0.2
Naphthalene, ug/L	<1	<1
Styrene, ug/L	<0.2	<0.2
Trichloroethene, ug/L	<0.2	1.3
Trichlorofluoromethane, ug/L	0.68	0.29
Toluene, ug/L	<0.2	<0.2

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-08-437

Received: 24 AUG 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
08-437-1	4928A	24 AUG 95
08-437-2	4928B	24 AUG 95

PARAMETER	08-437-1	08-437-2
Tetrachloroethene, ug/L	2.5	4.8
Vinyl chloride, ug/L	<0.2	<0.2
cis-1,2-Dichloroethene, ug/L	<0.2	0.39
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2
m- and p-Xylene Isomers, ug/L	<0.4	<0.4
o-Xylene, ug/L	<0.2	<0.2
p-Isopropyl toluene, ug/L	<0.2	<0.2
sec-Butylbenzene, ug/L	<0.2	<0.2
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2
tert-Butylbenzene, ug/L	<0.2	<0.2
Other E524.2/VOC (524.2)	---	---
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	9.46	11.2
1,2-Dichlorobenzene-d4 Theo, ug/L	10.0	10.0
4-Bromofluorobenzene Rep., ug/L	11.0	12.3
4-Bromofluorobenzene Theo., ug/L	10.0	10.0

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-08-437

Received: 24 AUG 95

Mr. Bill O'Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Jane Freemyer, Program Manager

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

This report shall not be reproduced, except in full, without the written approval of BCA. No use of this report for promotional or advertising purposes is permitted without prior written BCA approval.

BCA

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: ORDER PLACED FOR CLIENT: Law/Crandall, Inc. 9508437 :
: BC ANALYTICAL : GLEN LAB : 07:34:30 12 SEP 1995 - P. 1 :

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9508437*1	4928A	ALK	09.03.95	310.1	533-08	9549	8106
		CA	09.06.95	6010	535-03	951340	7396
		MG	09.06.95	6010	535-03	951340	7396
		CL	08.25.95	300.0	533-23	950825	8651
		CU	09.06.95	6010	535-03	951340	7396
		MBAS	08.25.95	425.1	533-15	9575	8106
		FE	09.06.95	6010	535-03	951340	7396
		MN	09.06.95	6010	535-03	951340	7396
		PH	08.24.95	150.1	533-21	95379	8651
		K	09.06.95	6010	535-03	951340	7396
		NA	09.06.95	6010	535-03	951340	7396
		SO4	08.25.95	300.0	533-23	950825	8651
		COND	08.30.95	120.1	533-11	9582	8604
		TDS	08.29.95	160.1		9578	6461
		ZN	09.06.95	6010	535-03	951340	7396
		ION.BALANCE	09.10.95	CALC			7992
		NITRATE.NO3.NO2	08.25.95	300.0	533-23	950825	8651
		DIG,AQ.HCL	09.05.95	3010		951340	7620
		AL	09.06.95	6010	535-03	951340	7396
		F	08.29.95	340.2	533-25	9537	7772
		COD	08.28.95	410.4	533-15	9584	8604
		B	09.06.95	6010	535-03	951340	7396
		CD	09.06.95	6010	535-03	951340	7396
		CR	09.06.95	6010	535-03	951340	7396
		PB,GFA	09.07.95	7421	534-07	951338	7396
		NI	09.06.95	6010	535-03	951340	7396
		DIG,AQ,GFA	09.05.95	3020		951338	7620
		VOA,524.2	08.26.95	524.2	537-03	95838	6750
9508437*2	4928B	ALK	09.03.95	310.1	533-08	9549	8106
		CA	09.06.95	6010	535-03	951340	7396
		MG	09.06.95	6010	535-03	951340	7396
		CL	08.28.95	300.0	533-23	950828	8651
		CU	09.06.95	6010	535-03	951340	7396
		MBAS	08.25.95	425.1	533-15	9575	8106
		FE	09.06.95	6010	535-03	951340	7396
		MN	09.06.95	6010	535-03	951340	7396
		PH	08.24.95	150.1	533-21	95379	8651
		K	09.06.95	6010	535-03	951340	7396
		NA	09.06.95	6010	535-03	951340	7396
		SO4	08.28.95	300.0	533-23	950828	8651
		COND	08.30.95	120.1	533-11	9582	8604
		TDS	08.29.95	160.1		9578	6461
		ZN	09.06.95	6010	535-03	951340	7396
		ION.BALANCE	09.10.95	CALC			7992

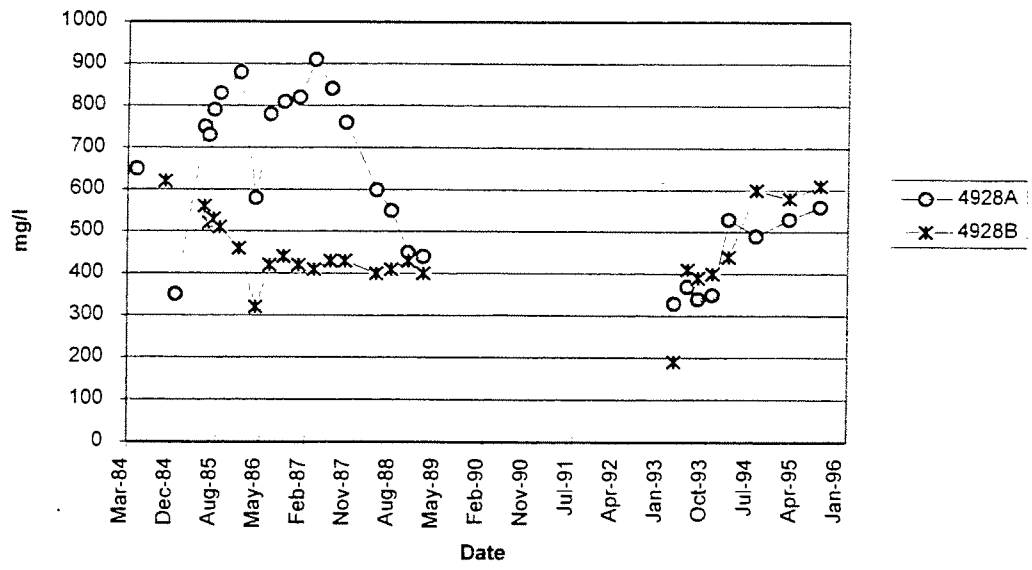
Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

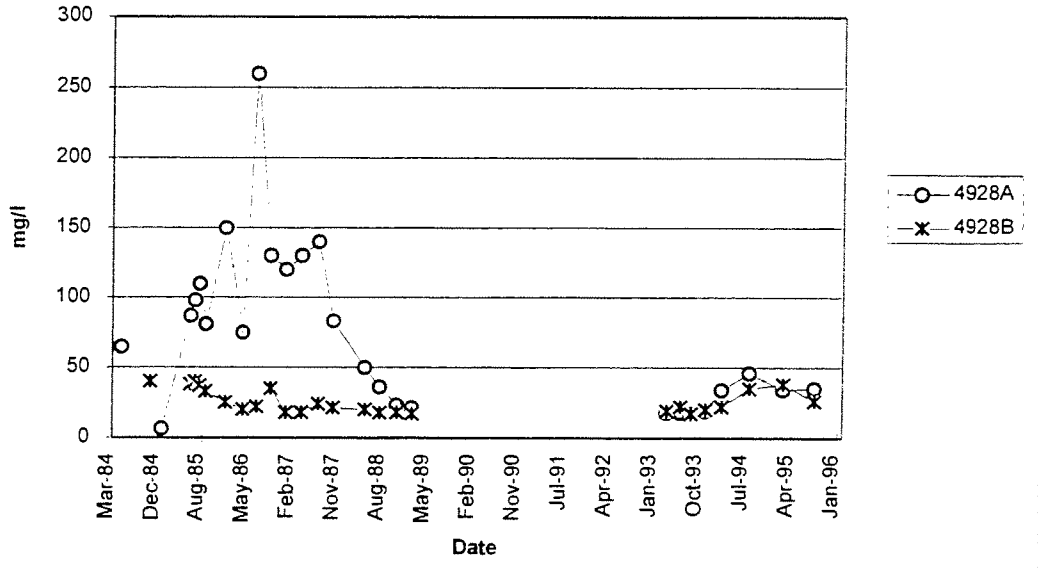
ID.NO = BC Analytical employee identification number of analyst.

APPENDIX E

WATER QUALITY HISTORY
AND
STATISTICAL DISTRIBUTION GRAPHS

JOB 20111-2-0316 DATE 1-25-96 F.T. _____ DR. _____ O.E. SLB CHKD WJD





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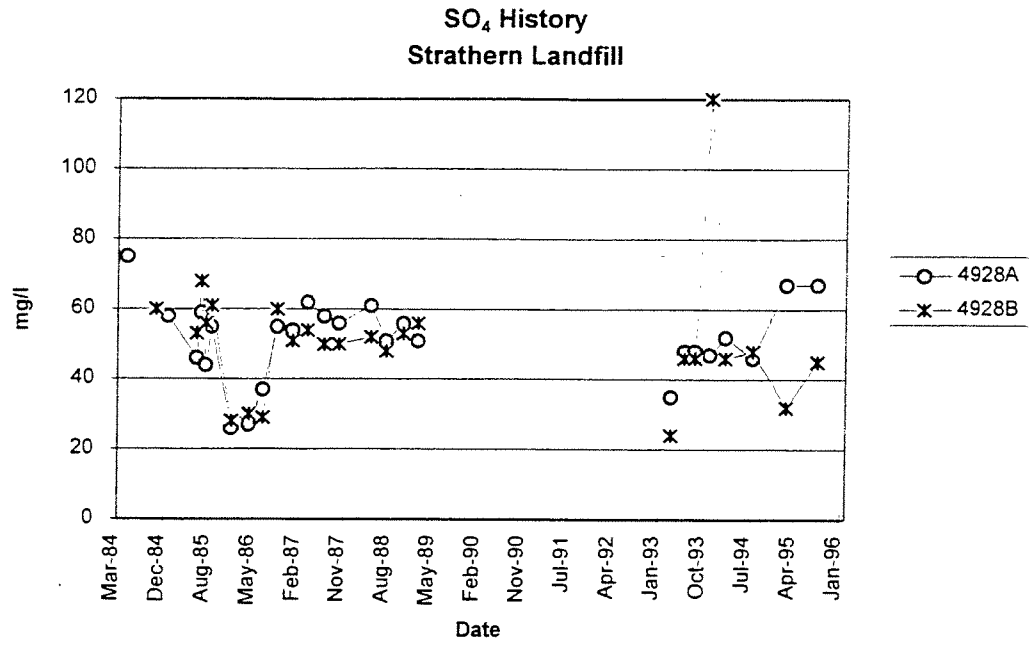

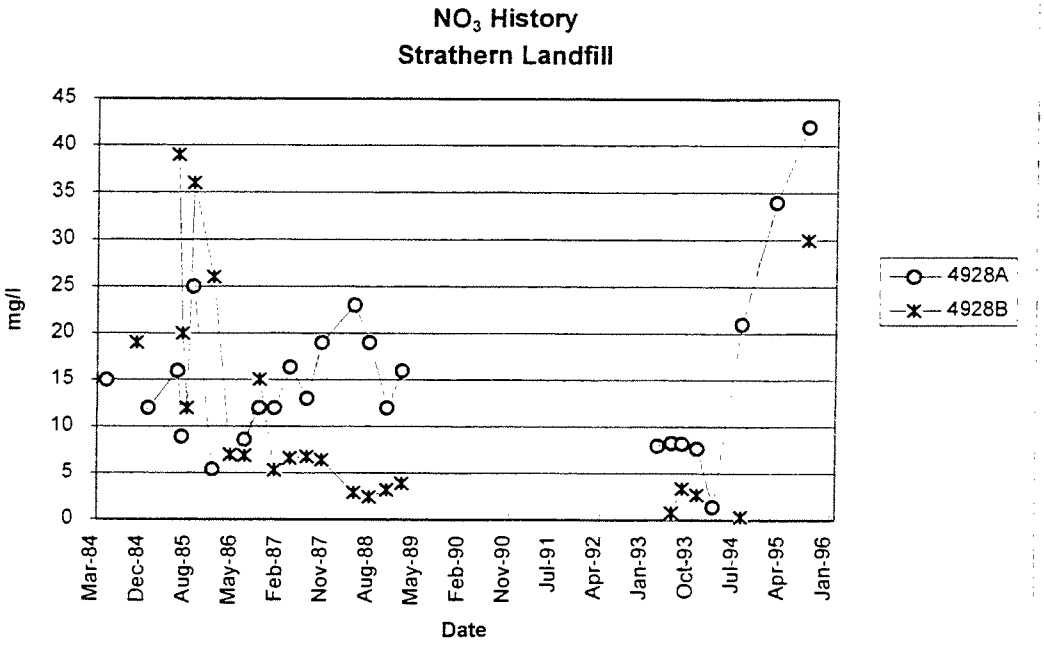

LAW/CRANDALL, INC.

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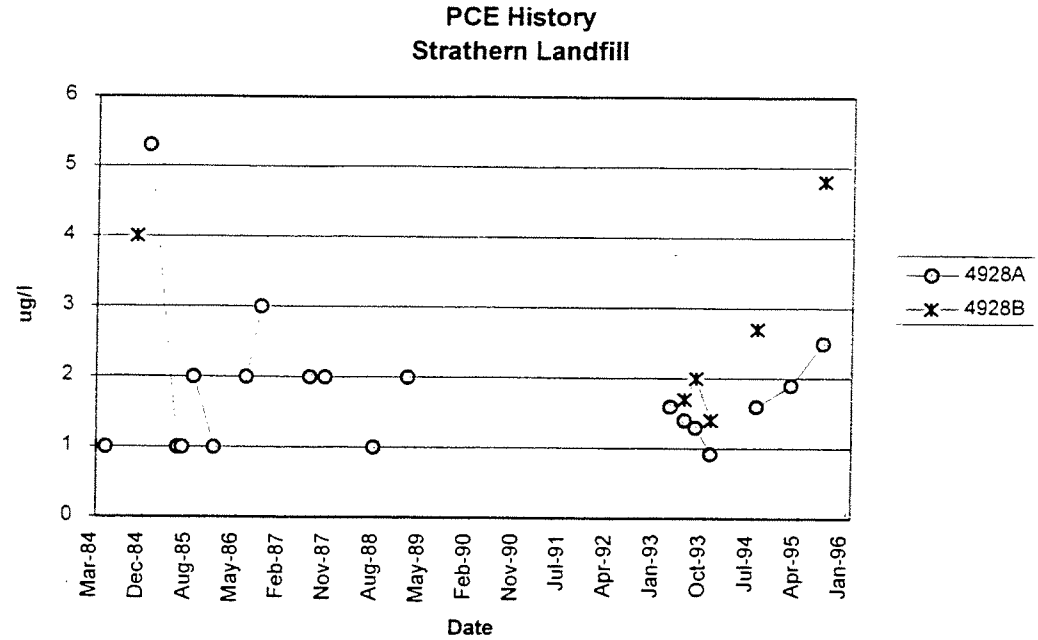
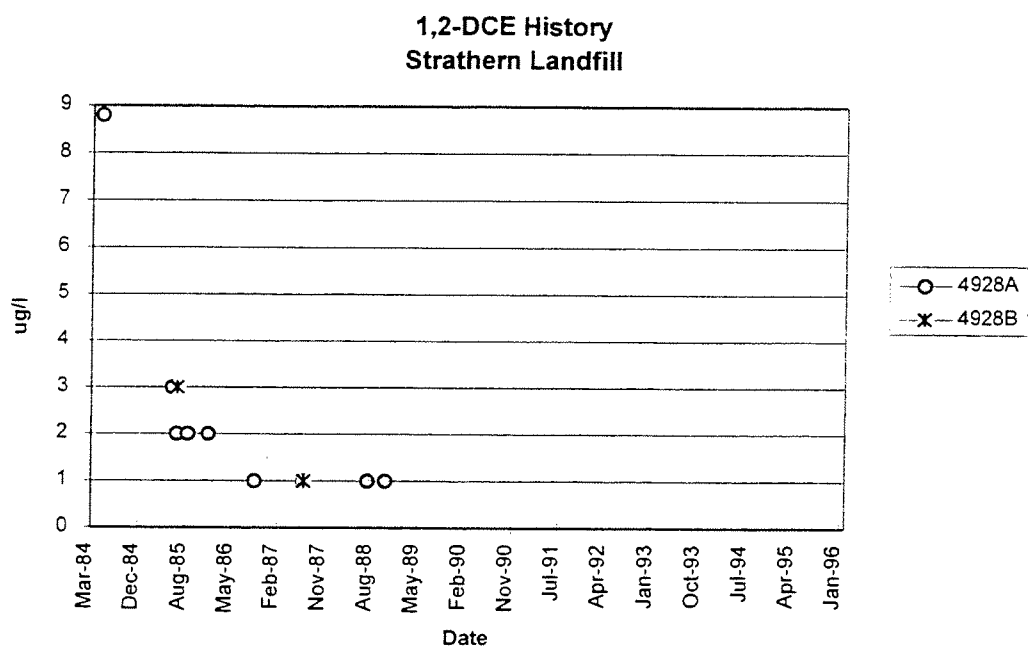
JOB 70111-2-0346 DATE 1-25-96 F.T. DR. O.E. SCS CHKD WJO



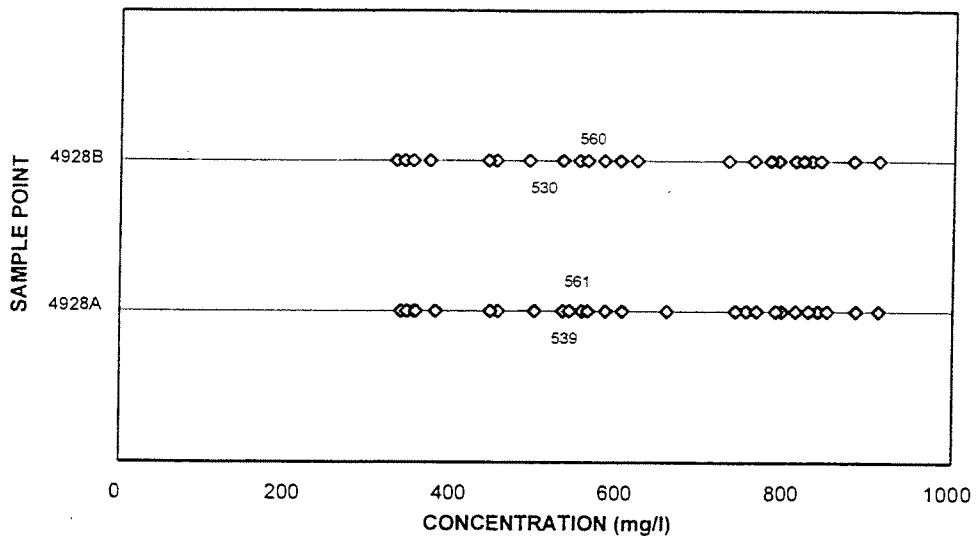


LAW/CRANDALL, INC.

004076

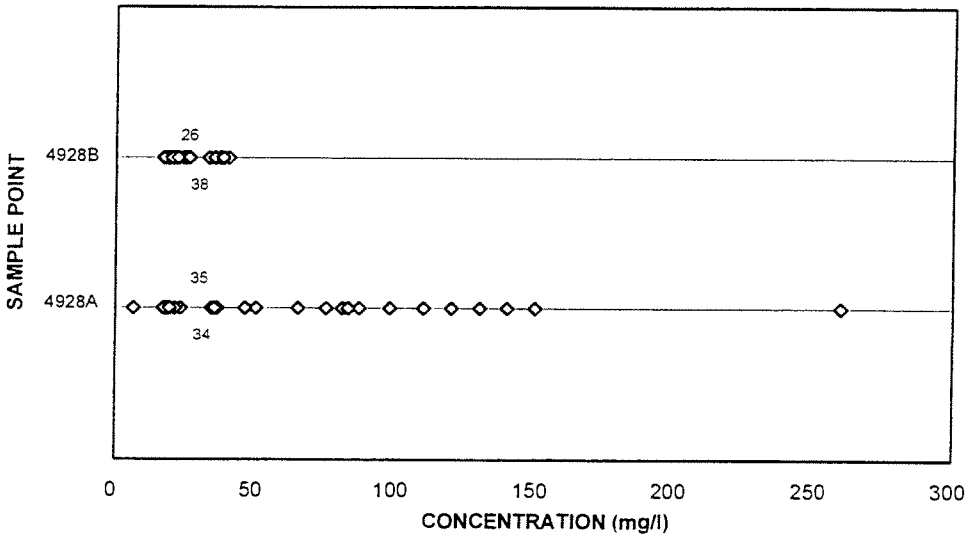
JOB 20112-0346 DATE 1-25-96 F.T. ____ DR. ____ O.E. S.C.S CHKD WJO

TDS
Statistical Distribution



Data labels are for 1995 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

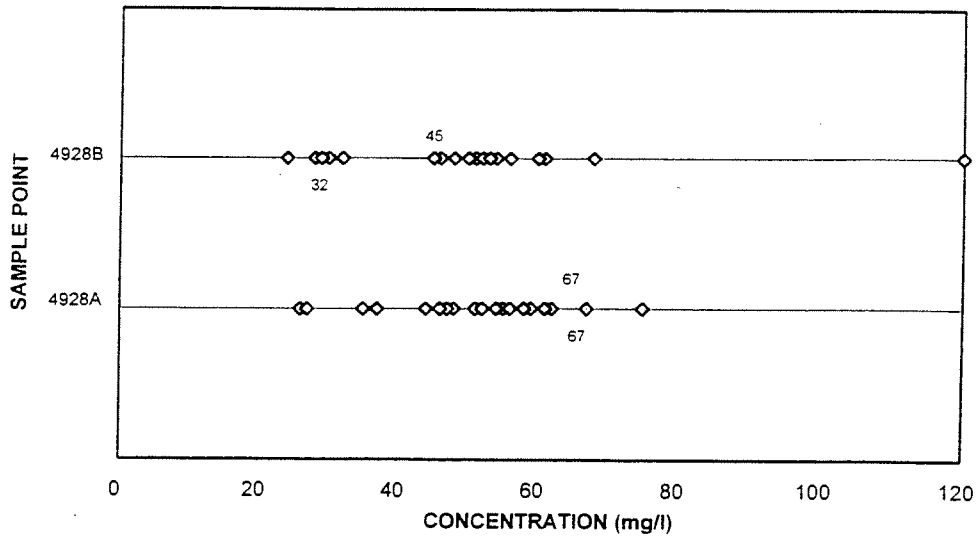
Cl
Statistical Distribution



Data labels are for 1995 monitonng year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

JOB 70111-2-0346 DATE 1-25-96 F.T. DR. O.E. SCB CHKD WJO

SO_4
Statistical Distribution



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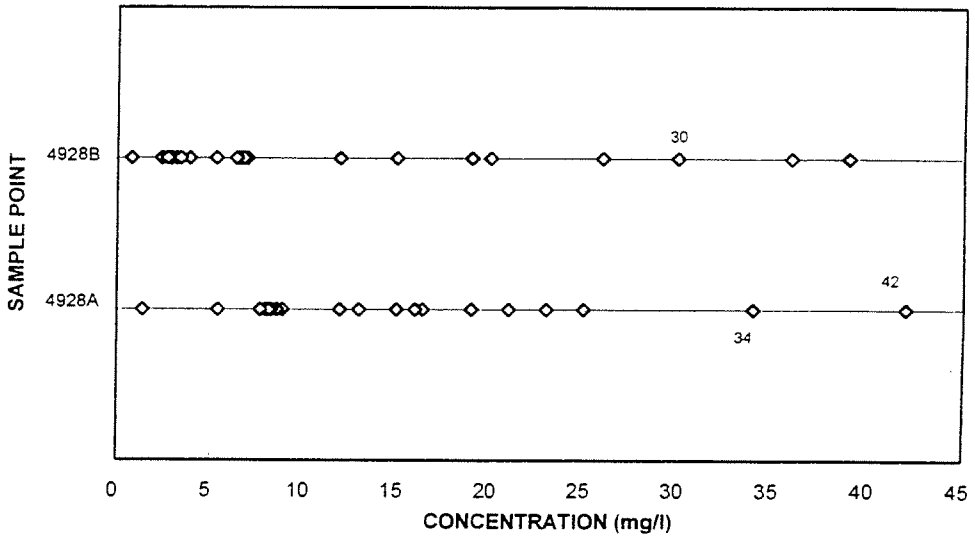
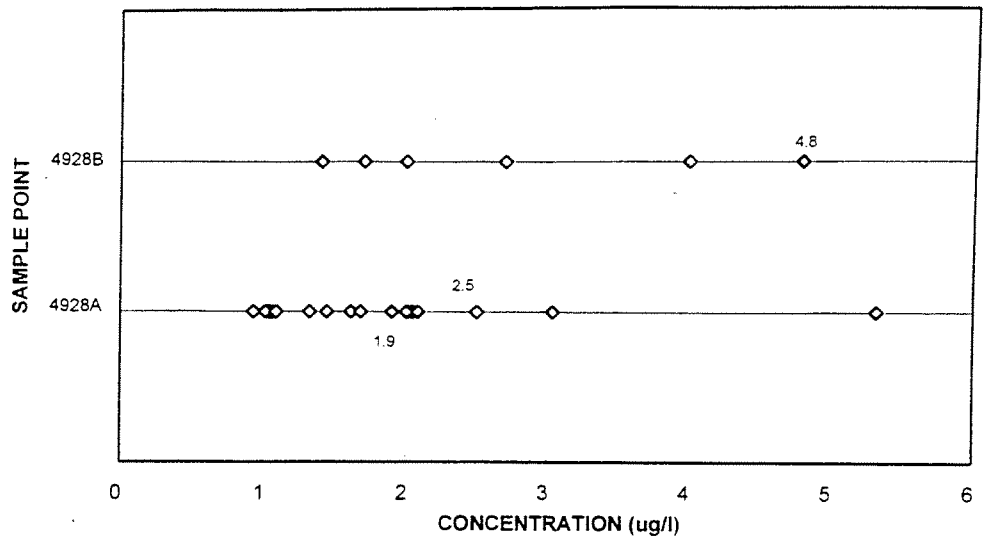
NO_3
Statistical Distribution



Data labels are for 1995 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

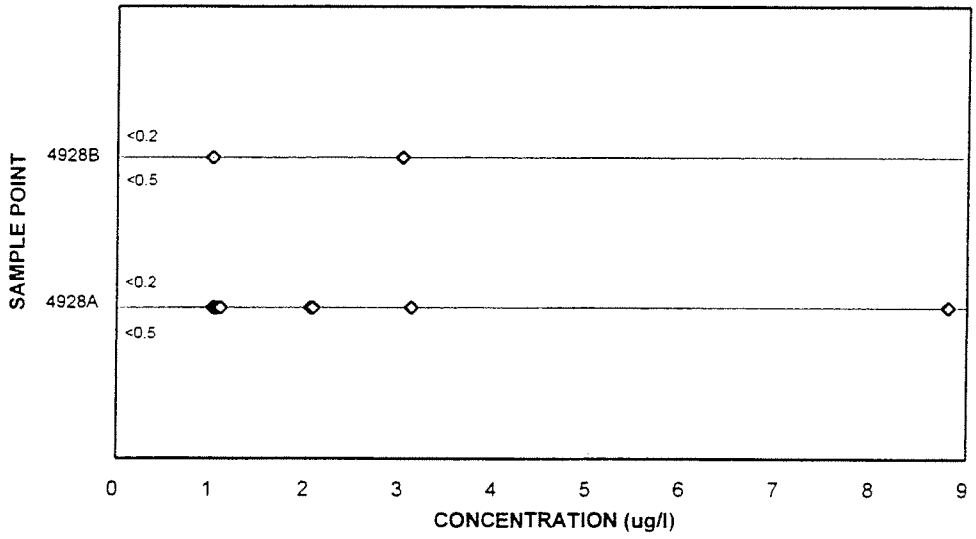
JOB 7011-2-0346 DATE 1-25-96 F.T. ____ DR. ____ O.E. SAS CHKD GO

PCE
Statistical Distribution



Data labels are for 1995 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

1,2-DCA
Statistical Distribution



Data labels are for 1995 monitoring year. Label below grouping is 1st quarter data; label above grouping is 3rd quarter data.

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

1994 ANNUAL REPORT

GROUNDWATER MONITORING

STRATHERN LANDFILL

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared for

Los Angeles By-Products Company

January 27, 1995

Law/Crandall Project No. 2702.20346.0001

004080

LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

January 27, 1995

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Project No. 2702.20346.0001
RWQCB CI No. 7055

Attention: Mr. Mike McAllister

1994 ANNUAL REPORT
GROUNDWATER MONITORING
Strathern Landfill
Sun Valley District
Los Angeles, California

INTRODUCTORY SUMMARY

This report is a summary of the 1994 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall, Inc., monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells rose in 1994 in response to precipitation during the winter months and spreading operations at the Hansen, Branford and Tujunga spreading grounds. Groundwater quality met California Drinking Water Standards for the parameters measured, except for iron, manganese and TDS. However, based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality.

SCOPE AND LIMITATIONS

Law/Crandall, Inc. measures groundwater levels, collects groundwater samples, analyzes the laboratory results and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional

Water Quality Control Board (RWQCB), Los Angeles Region under Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall, Inc., prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data including a description of the site, the monitoring requirements, and the groundwater monitoring well network.

Site Description

Los Angeles By-Products Company operates the Strathern Landfill located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has a capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement (WDR) Order No. 91-086, and Monitoring and Reporting Program (MRP) No. 7055, adopted by the

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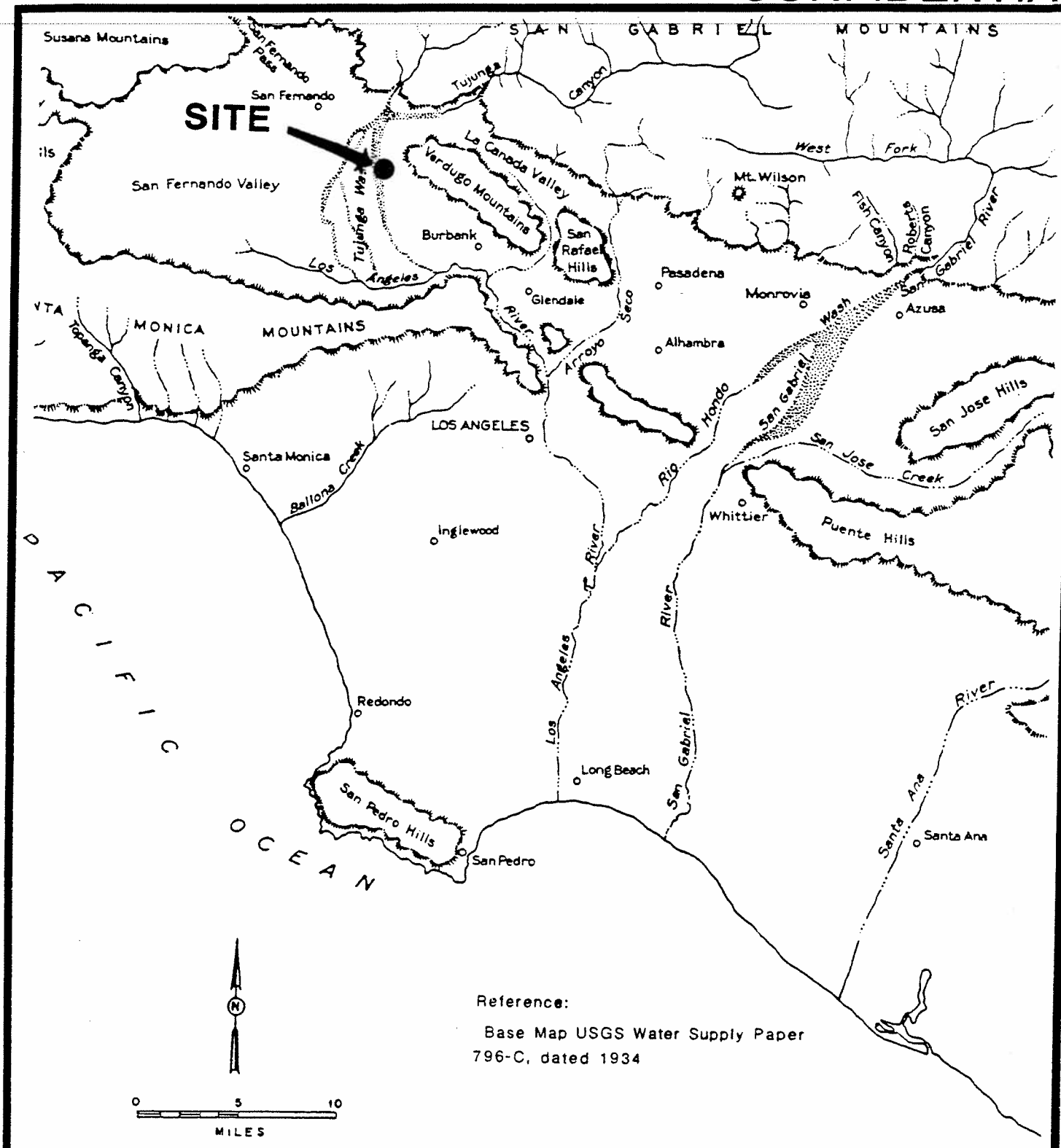

Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

004083 FIGURE 1

FORM 120 JOB DATE DR. G. M. U. O.E. CHKD.

California Regional Water Quality Control Board (RWQCB), Los Angeles Region on December 2, 1991. The MRP requires semiannual reporting on groundwater quality. This report contains an annual summary of the 1994 groundwater monitoring program. Law/Crandall, Inc., collected groundwater samples in February and August of 1994 and prepared this report. BC Analytical Laboratories performed the chemical analyses. BC Analytical is certified for such analyses by the State Department of Health Services.

Monitoring Well Network

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS

WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1994 monitoring results, including groundwater levels and groundwater quality.

Groundwater Levels

Law/Crandall measured groundwater levels in February and August of 1994. In response to groundwater recharge operations at the Hansen, Branford and Tujunga spreading grounds,

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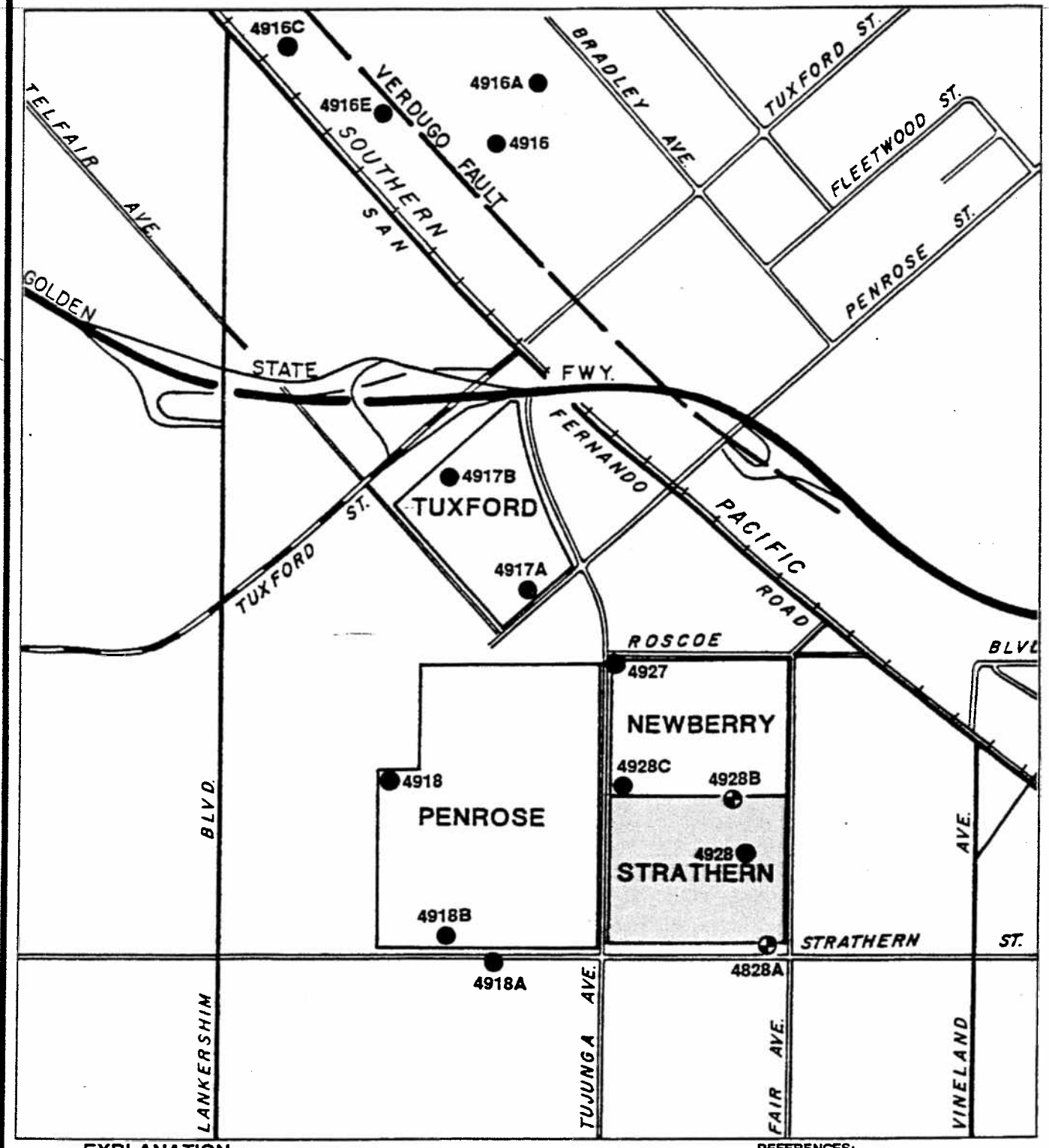


EXPLANATION:

4928 MONITORING WELL LOCATION AND NUMBER

4828B OTHER NEARBY MONITORING WELL

GROUND WATER SURFACE ELEVATION IN FEET ASL.

LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000

SCALE IN FEET

N

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

MONITORING WELL LOCATIONS

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

JOB 2702.20346.0001 DATE 10/21/94 F.T. DR. MN O.E. SLB CHKD

Figure 2

004085

groundwater levels rose about 11 feet in the monitoring wells between November 1993 and August this year. Figure 3 contains the hydrograph for the two wells. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels in February and August. Appendix B contains these contour maps.

Groundwater Flow Velocity and Direction

We calculated groundwater flow velocities during the year based on the directional hydraulic conductivity and groundwater gradient. Based on test pumping data for nearby wells, we estimated overall hydraulic conductivity to be about 300 ft/day. We expect hydraulic conductivity (K) in the north-south direction to be about four times K in the east-west direction because the depositional direction is to the south. Since groundwater gradient was to the south during the year, we calculated K in that direction. We estimate K in the north-south direction to be 600 ft/day. The groundwater gradient between the two monitoring wells was 0.0022 in February and 0.002 in August. Groundwater flow for February was 1.33 ft/day or 487 ft/year. In August, flow was 1.2 ft/day or 438 ft/year. At these flow velocities it would take about two years for groundwater to flow from the north side of the property to the south side.

Groundwater Quality

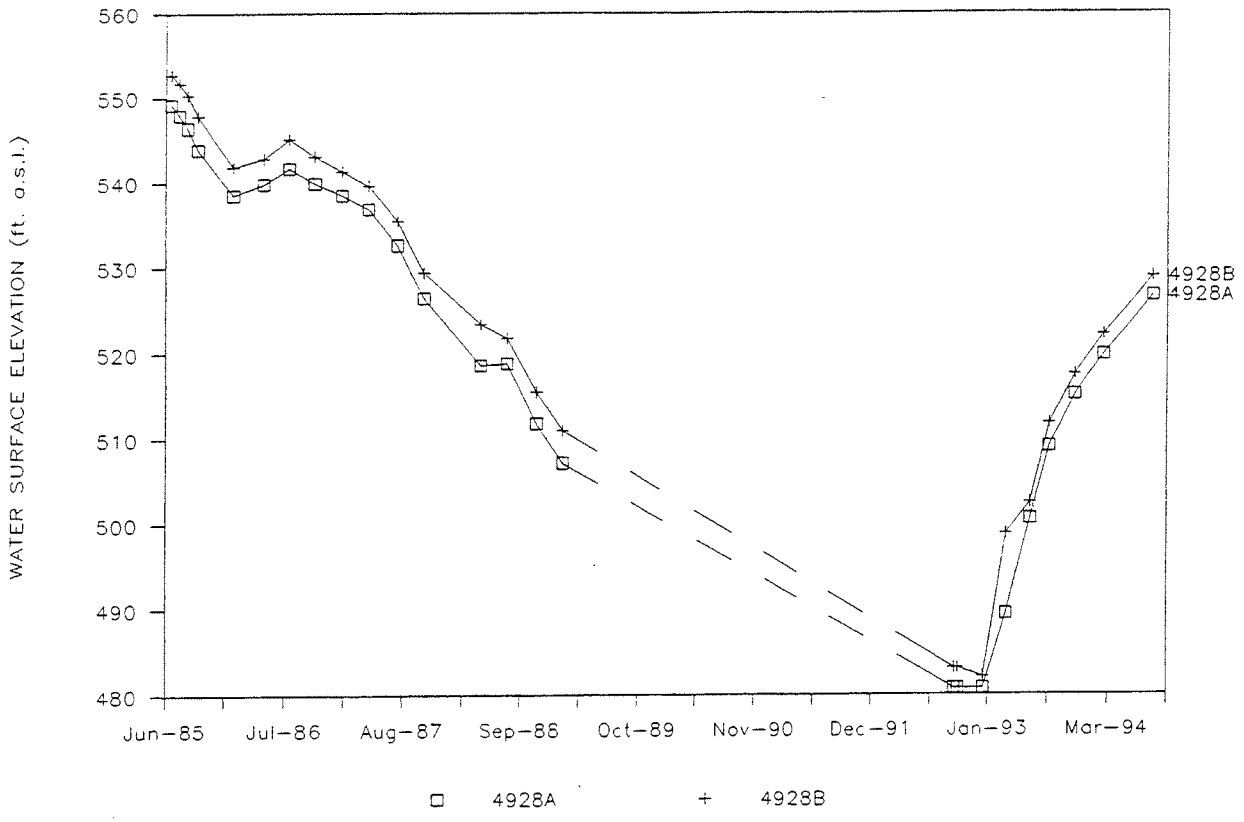
General

We collected groundwater samples in February and August of 1994. We analyzed for CO_2, temperature, alkalinity, pH and electrical conductivity (EC) in the field; lab analyses were done for pH, EC, general minerals and volatile organic compounds. We compiled the data into a database, which is included in Appendix A. Laboratory analyses indicated that during the year, the groundwater met California Drinking Water Standards for the constituents measured, except for iron, manganese and TDS (Total Dissolved Solids) during the first and third quarters.

JOB 2702.2034.6001 DATE 10/05/94 F.T. _____ DR. _____ O.E. JJS CHKD _____

HYDROGRAPH

STRATHERN LANDFILL



LAW/CRANDALL, INC.

FIGURE 3

004087

Inorganics

In upgradient well 4928B, levels of TDS exceeded drinking water limits during the third quarter, and iron and manganese levels exceeded drinking water limits during the first and third quarters. In downgradient well 4928A, levels of TDS exceeded drinking water limits during the first quarter, and iron levels exceeded drinking water limits during the first and third quarters.

We believe TDS levels may be related to changes in groundwater levels. The last time water levels were as high as they now are, TDS levels were above drinking water limits. Water levels have been rising in the area since at least April 1993 when we restarted measuring them after water levels rose above the bottom of the wells' screened intervals (Figure 3). With the rising water levels, TDS levels in both wells 4928A and 4928B have increased. As water levels fell between 1985 and 1992, dissolved solids in groundwater decreased. When water levels rose, solids were introduced into groundwater. See Appendix C for water quality history graphs.

High iron and manganese levels may also be related to rising water levels. Wells 4928A and 4928B are built with steel well screen. Low water levels prior to 1993 exposed well screen to air and likely resulted in corrosion of the exposed screen. As water levels rose between 1993 and now, the corroded screen was resubmerged. Some of the rust particles may have entered the sample bailer and were included in the total metals analysis. Since EPA sampling protocol does not allow field filtering of total metals samples, we did not field filter these samples. Acid preservative may have dissolved particulate metals, causing increased dissolved metals detected in the chemical analyses. Also, the pH levels have continued to decline in wells 4928A and 4928B. The more acidic groundwater (lower pH levels) in contact with rust particles in the well casings may be a source of higher metals concentrations. The increase in carbon dioxide (CO_2) levels may cause or at least indicate acidification of groundwater.

Increased CO_2 is not likely the result of landfill activities because Strathern landfill accepts only inert fill. Persistent pulses of chloride and nitrate in both upgradient and downgradient wells, and the February 1994 positive result for MBAS in downgradient well 4928A suggests sewage wastes may be the cause.

To illustrate relationships of ions in groundwater over time, we made Schoeller plots of both the upgradient well 4928B and downgradient well 4928A for July 1985 and August 1994. The Schoeller plots are shown on Figure 4. Schoeller plots compare log milliequivalents (e.p.m.) Ca, Mg, Na+K, Cl, SO_4, and CO_3+HCO_3 (from left to right). Naturally occurring, unaffected, calcium-bicarbonate groundwater has a symmetrical, concave upward Schoeller plot. Under natural conditions, calcium and carbonate+bicarbonate should have roughly the same log e.p.m. value. In both 1985 and 1994 CO_3+HCO_3 was higher than Ca. This indicates that Ca is lower than what would be expected for groundwater in equilibrium. This is likely the result of added CO_2 in the system. Carbon dioxide can be added to a groundwater system through decomposition of organic matter. Historical groundwater chemical analysis shows that total organic carbon (TOC) and chemical oxygen demand (COD) have had spikes at the two site monitoring wells, especially at the downgradient well 4928A (Appendix A). Nitrate has had persistent spikes in both monitoring wells. The availability of organic carbon and nitrate (acting as a fertilizer) causes bacteria to make CO_2. Field CO_2 measurements have shown relatively high values since testing began in 1985.

The Schoeller plots also show sodium+potassium levels to be higher than expected for calcium bicarbonate water in 1994 and especially in 1985. This is the likely the result of increased CO_2 which in turn lowers pH. Lower pH causes ion exchange (softening) which may explain the relatively low concentration of Ca and high concentration of Na+K. Figure 4 shows that the departure from the typical calcium-bicarbonate water Schoeller plot was less pronounced in 1994 than it was in 1985. These chemical reactions existed before the landfill began operations, and so are unrelated to the fill.

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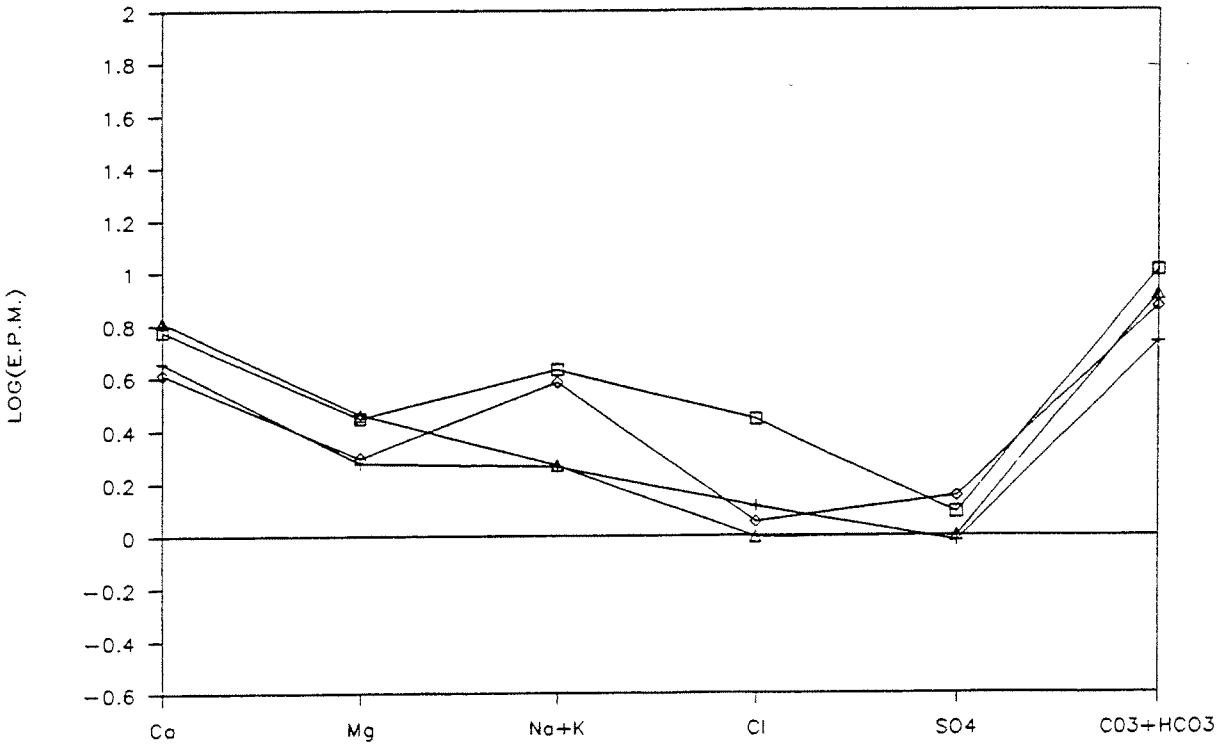
SCHOELLER PLOT

STRATHERN LANDFILL



□ WELL 4928A Jul-85

◇ WELL 4928B Jul-85

\+ WELL 4928A Aug-94

△ WELL 4928B Aug-94

LAW/CRANDALL, INC.

FIGURE 4

The statistical distribution graphs (Appendix C) show that for all constituents plotted, 1994 data fall generally toward the center of the historic ranges except for the upgradient well 4928B TDS level. Based on the statistical data, the water is within normal levels except for TDS in upgradient well 4928B, which is at the upper end of the historic range.

Organics

During the third quarter, trace amounts of tetrachloroethylene (PCE) were detected in both monitoring wells and traces of trichloroethylene (TCE) were detected in upgradient well 4928B. Levels were below California Drinking Water Standards for PCE and TCE. Trace amounts of several other organic constituents were detected in well 4928A and 4928B. No pattern has emerged from this data, and the landfill does not appear to be the source.

TABLE 2

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
1994 Cumulative Data

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE			
		4928A		4928B	
		FEB	AUG	FEB	AUG
Inorganic	(ppm)				
Total Dissolved Solids (TDS)	500	530	490	440	600
Chloride (Cl)	250	34	46	22	35
Sulfate (SO_4)	250	52	46	46	48
Nitrate (NO_3)	45	1.4	21	<0.2	0.31
Iron (Fe)	0.3	0.76	0.42	87	7.9
Manganese (Mn)	0.05	0.03	<0.02	2.7	1.3
Zinc (Zn)	5	0.48	0.48	4.0	1.2
Organic	(ppb)				
Trichloroethylene (TCE)	5	<0.5	<0.5	<0.5	1.1
Tetrachloroethylene (PCE)	5	<0.5	1.6	<0.5	2.7
Trichlorofluoromethane	150	<0.5	<0.5	2.1	1.1
1,2-dichlorobenzene (1,2-DCB)	600	<0.5	<0.5	<0.5	1.2
1,1-dichloroethane (1,1-DCA)	5	<0.5	<0.5	<0.5	1.2
1,1-dichloroethene (1,1-DCE)	6	<0.5	<0.5	<0.5	0.72

* Source: CCR, Title 22, Division 4, Chapter 15

The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years.

Appendix D contains the groundwater sampling protocol. Appendix E contains analytical results from BC Analytical Laboratories of groundwater samples collected in 1994. Appendix E also contains the chain-of-custody records.

CONCLUSIONS

Water levels continued to rise due to precipitation during the winter months and recharge operations at the Hansen, Branford and Tujunga spreading grounds. There seems to be a correlation between rising water levels and increasing dissolved solids. The Schoeller plots show a persistent departure from normal calcium-bicarbonate groundwater since chemical analysis began in 1984. There doesn't seem to be an association between the start of landfill operations and any unusual change in groundwater character. Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall, Inc., will continue to monitor the groundwater at Strathern Landfill.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis, R.G. 6062
Project Geologist

Alice M. Campbell, C.E.G. 1157
Principal Geologist
Chief Scientist

SLB
700WATER\94-GWM\20346A94.RPT
Attachment

CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 27th day of January, 1994, at Los Angeles, California

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
Vice President

APPENDIX A

GROUNDWATER DATABASE

JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJO CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)						LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
WELL 4928A	31-Dec-84	803.78							560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
WELL 4928A	19-Jun-85	803.78	549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
WELL 4928A	17-Jul-85	803.78	547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
WELL 4928A	14-Aug-85	803.78	546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
WELL 4928A	19-Sep-85	803.78	543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
WELL 4928A	16-Jan-86	803.78	538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
WELL 4928A	29-Apr-86	803.78	539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
WELL 4928A	22-Jul-86	803.78	541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
WELL 4928A	15-Oct-86	803.78	539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
WELL 4928A	14-Jan-87	803.78	538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
WELL 4928A	15-Apr-87	803.78	536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
WELL 4928A	24-Jul-87	803.10	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
WELL 4928A	21-Oct-87	803.10	526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
WELL 4928A	29-Apr-88	803.10	518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
WELL 4928A	28-Jul-88	803.10	518.82	7.4	67.1	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
WELL 4928A	08-Nov-88	803.10	511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
WELL 4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
WELL 4928A	06-Oct-92	803.78	480.78																						
WELL 4928A	19-Oct-92	803.78	480.78																						
WELL 4928A	15-Jan-93	803.78	480.78																						
WELL 4928A	02-Apr-93	803.78	489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
WELL 4928A	22-Jun-93	803.78	500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
WELL 4928A	24-Aug-93	803.78	509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
WELL 4928A	19-Nov-93	803.78	515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
WELL 4928A	21-Feb-94	803.78	519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.30	0.26	530			
WELL 4928A	05-Aug-94	803.78	526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21.0	0.26	0.48	490			

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JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJG W.P. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)											
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
WELL 4928A	31-Dec-84	44	5.3								<0.09	0.220		<0.04				<0.015	B&C
WELL 4928A	19-Jun-85	<1	1	3							<0.086	<0.09		0.290				0.670	B&C
WELL 4928A	17-Jul-85	<1	1	2							<0.09	0.060		0.240				0.600	B&C
WELL 4928A	14-Aug-85										<0.08	<0.046		0.230				0.600	B&C
WELL 4928A	19-Sep-85	37	2	2							<0.035	<0.042		0.260				0.800	B&C
WELL 4928A	16-Jan-86	<1	1	2							<0.033	<0.063		0.390				0.650	B&C
WELL 4928A	29-Apr-86	<1	<1	<1							<0.02	<0.2		0.320				0.700	B&C
WELL 4928A	22-Jul-86	<1	2	<1							<0.02	<0.2		0.400				0.490	B&C
WELL 4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
WELL 4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
WELL 4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
WELL 4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
WELL 4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
WELL 4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
WELL 4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
WELL 4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
WELL 4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
WELL 4928A	06-Oct-92																		
WELL 4928A	19-Oct-92																		
WELL 4928A	15-Jan-93																		
WELL 4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001	<0.02	0.20	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
WELL 4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
WELL 4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
WELL 4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001	<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
WELL 4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001	<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
WELL 4928A	05-Aug-94	<0.5	1.60	<0.5	<0.5	<0.5	<0.05			<0.003	<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C

LAW/CRANDALL, INC.

004097

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JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJD CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES											GENERAL MINERAL(ppm)				
POINT	DATE	REF PT.	M S R	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928B	23-Oct-84	823.10							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
WELL 4928B	19-Jun-85	823.10	552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
WELL 4928B	17-Jul-85	823.10	551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
WELL 4928B	14-Aug-85	823.10	550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
WELL 4928B	19-Sep-85	823.10	547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
WELL 4928B	16-Jan-86	823.10	541.82	7.2	68	750		321	750	7.2	107	22	38	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
WELL 4928B	29-Apr-86	823.10	542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
WELL 4928B	22-Jul-86	823.10	545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
WELL 4928B	15-Oct-86	823.10	543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
WELL 4928B	14-Jan-87	823.10	541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
WELL 4928B	15-Apr-87	823.10	539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6		340	54	18	6.6	0.4	0.40	410	0.08	11.0	
WELL 4928B	24-Jul-87	823.10	535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6		350	50	24	6.8			430	<0.05	<3	
WELL 4928B	21-Oct-87	823.10	529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6		370	50	21	6.4	0.25	0.40	430	<0.05	<3	
WELL 4928B	29-Apr-88	823.17	523.37	8.6	68.2	455	25.0	260	710	7.8	82	31	31	4.2	<0.6		356	52	20	2.9	0.18	0.40	400	7.0		<0.08
WELL 4928B	28-Jul-88	823.17	521.77	7.4	68.0	335	25.0	336	680	7.5	85	20	30	3.9	<0.6		350	48	18	2.4	0.19	0.40	410	6.0		<0.08
WELL 4928B	08-Nov-88	823.17	515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6		380	53	18	3.2	0.16	0.30	430	<3		<0.08
WELL 4928B	07-Feb-89	823.17	511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6		350	56	17	3.9	<0.02	0.40	400	<5		0.24
WELL 4928B	06-Oct-92	823.09	483.09																						
WELL 4928B	19-Oct-92	823.09	483.09																						
WELL 4928B	15-Jan-93	823.09	482.09																						
WELL 4928B	02-Apr-93	823.09	498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
WELL 4928B	22-Jun-93	823.09	502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
WELL 4928B	24-Aug-93	823.09	511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
WELL 4928B	19-Nov-93	823.09	517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
WELL 4928B	21-Feb-94	823.09	522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
WELL 4928B	05-Aug-94	823.09	528.93	7	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			

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JOB 2702.20346.0601 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJO CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)						TRACE ELEMENTS (ppm)										
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928B	23-Oct-84		4								<0.06	<0.08		2.200				0.082	B&C
WELL 4928B	19-Jun-85	<1	<1	<1							<0.086	<0.09		2.270				0.077	B&C
WELL 4928B	17-Jul-85	<1	<1	3							<0.09	<0.06		2.400				0.081	B&C
WELL 4928B	14-Aug-85										<0.08	<0.046		2.500				0.050	B&C
WELL 4928B	19-Sep-85	<1	3	<1							<0.035	<0.042		2.400				0.067	B&C
WELL 4928B	16-Jan-86	<1	<1	<1							<0.033	<0.063		1.700				0.051	B&C
WELL 4928B	29-Apr-86	<1	1	<1							<0.02	<0.2		1.300				0.070	B&C
WELL 4928B	22-Jul-86	<1	3	<1							<0.02	<0.2		1.100				0.050	B&C
WELL 4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
WELL 4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
WELL 4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
WELL 4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02	<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
WELL 4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
WELL 4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
WELL 4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
WELL 4928B	06-Oct-92																		
WELL 4928B	19-Oct-92																		
WELL 4928B	15-Jan-93																		
WELL 4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005	<0.02	0.82	<0.0002	0.06	0.049	<0.04	<0.004	3.5	B&C
WELL 4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001	<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
WELL 4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001	<0.02	17	<0.0002	0.40	0.018	<0.04	<0.004	4.8	B&C
WELL 4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.10			<0.001	<0.02	82		3.80	0.003	<0.04		3.0	B&C
WELL 4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.50			<0.001	<0.02	87		2.70	0.013	<0.04		4.0	B&C
WELL 4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003	<0.03	7.9		1.30	0.017	<0.005		1.2	B&C

LAW/CRANDALL, INC.

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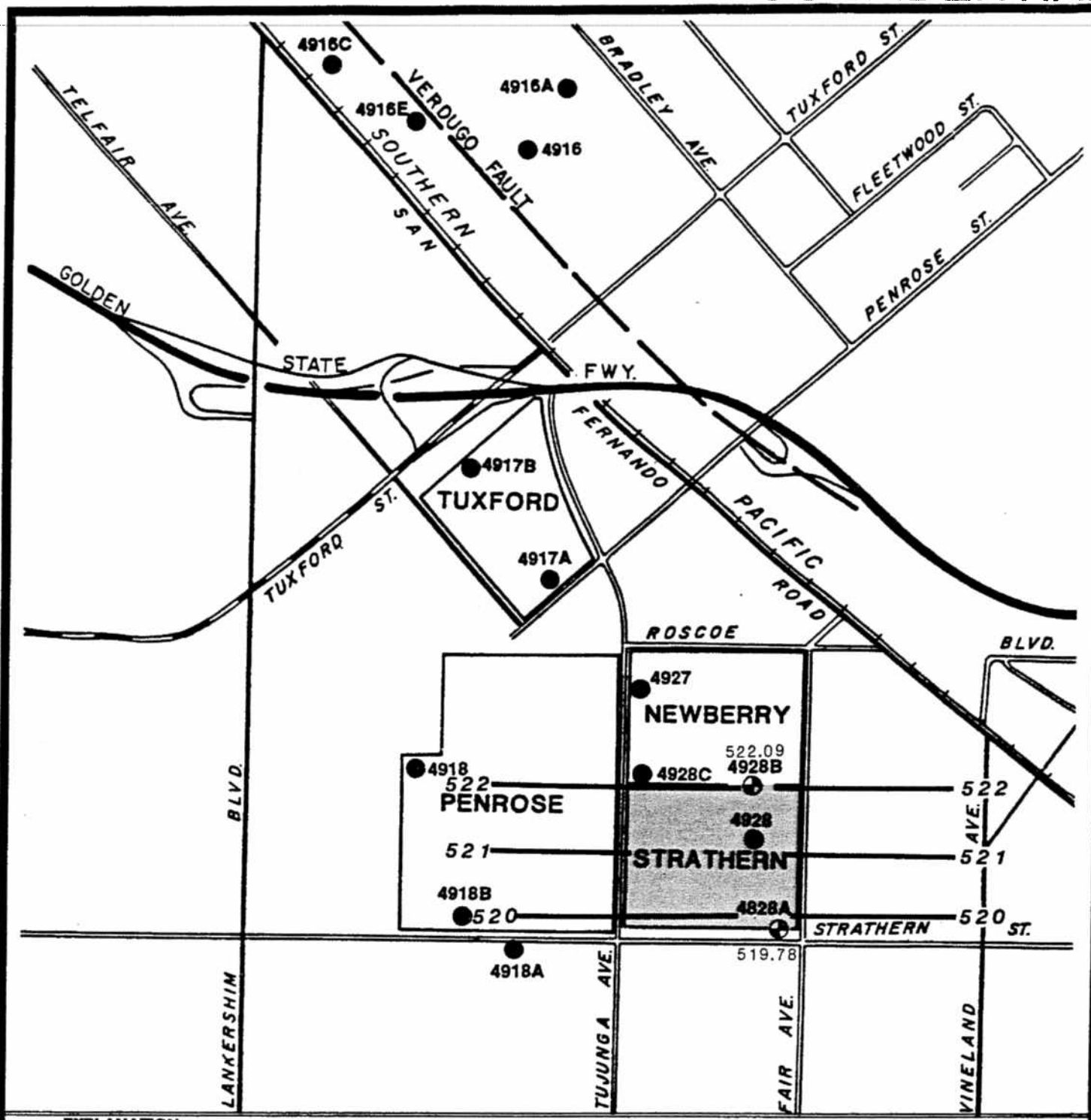
APPENDIX B

GROUNDWATER CONTOUR MAPS

CONFIDENTIAL



EXPLANATION:

- MONITORING WELL LOCATION AND NUMBER
- OTHER NEARBY MONITORING WELL
- 522.09 GROUND WATER SURFACE ELEVATION IN FEET ASL
- 522 LINES OF EQUAL GROUND WATER ELEVATION

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

0 1000 2000
SCALE IN FEET

N

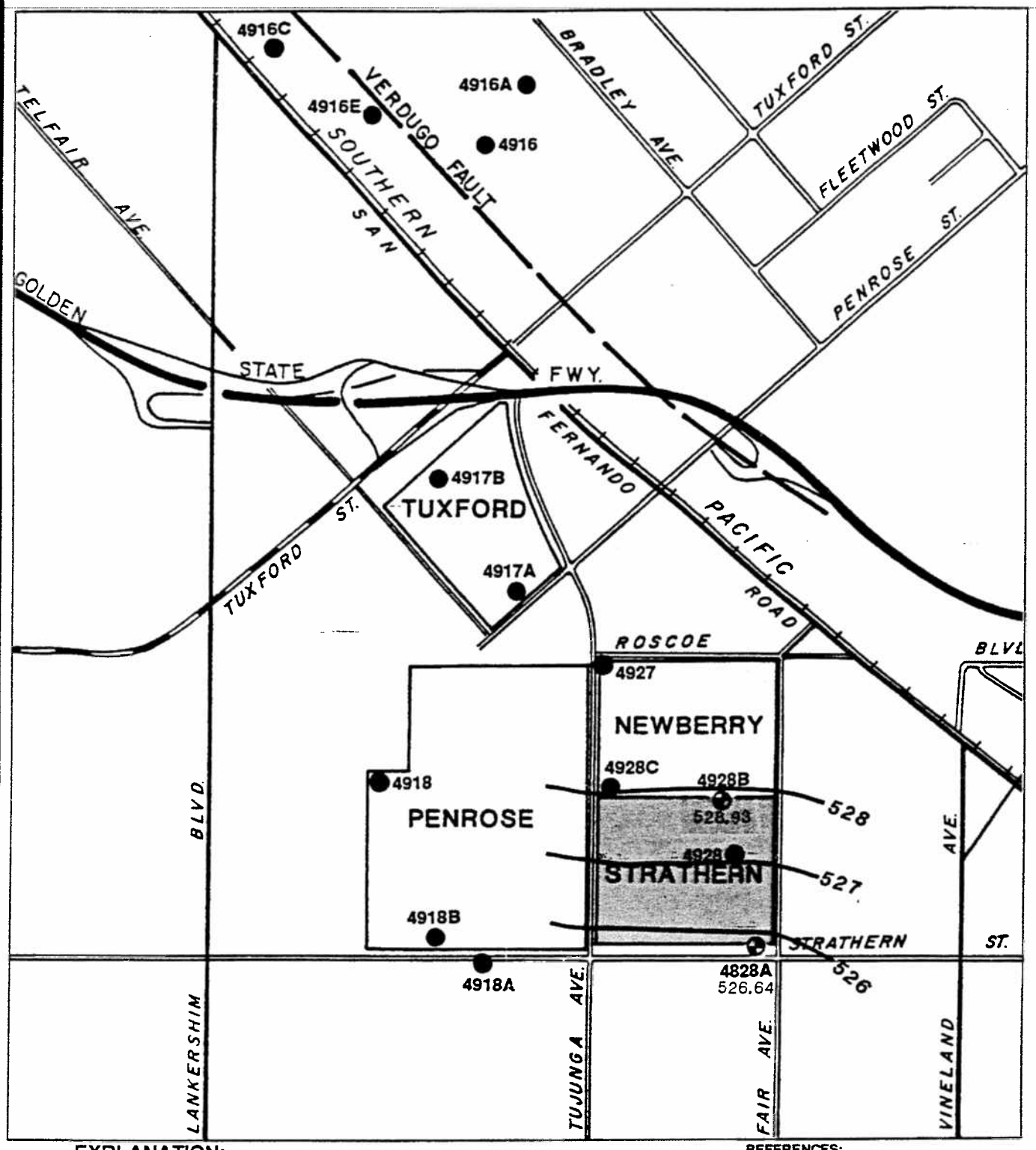
FEBRUARY 1994
GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

004101 FIGURE 2

CONFIDENTIAL



JOB 2702.20346.0001 DATE 10/21/94 F.T. ____ DR. MN O.E. JTO CHKD ____

EXPLANATION:

- 4928 — MONITORING WELL LOCATION AND NUMBER
- 4828B — OTHER NEARBY MONITORING WELL
- 528.93 — GROUND WATER SURFACE ELEVATION IN FEET ASL.
- 528 — LINES OF EQUAL GROUND WATER ELEVATION

0 1000 2000
SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST 1994

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2

004102

APPENDIX C

WATER QUALITY HISTORY
AND STATISTICAL DISTRIBUTION GRAPHS

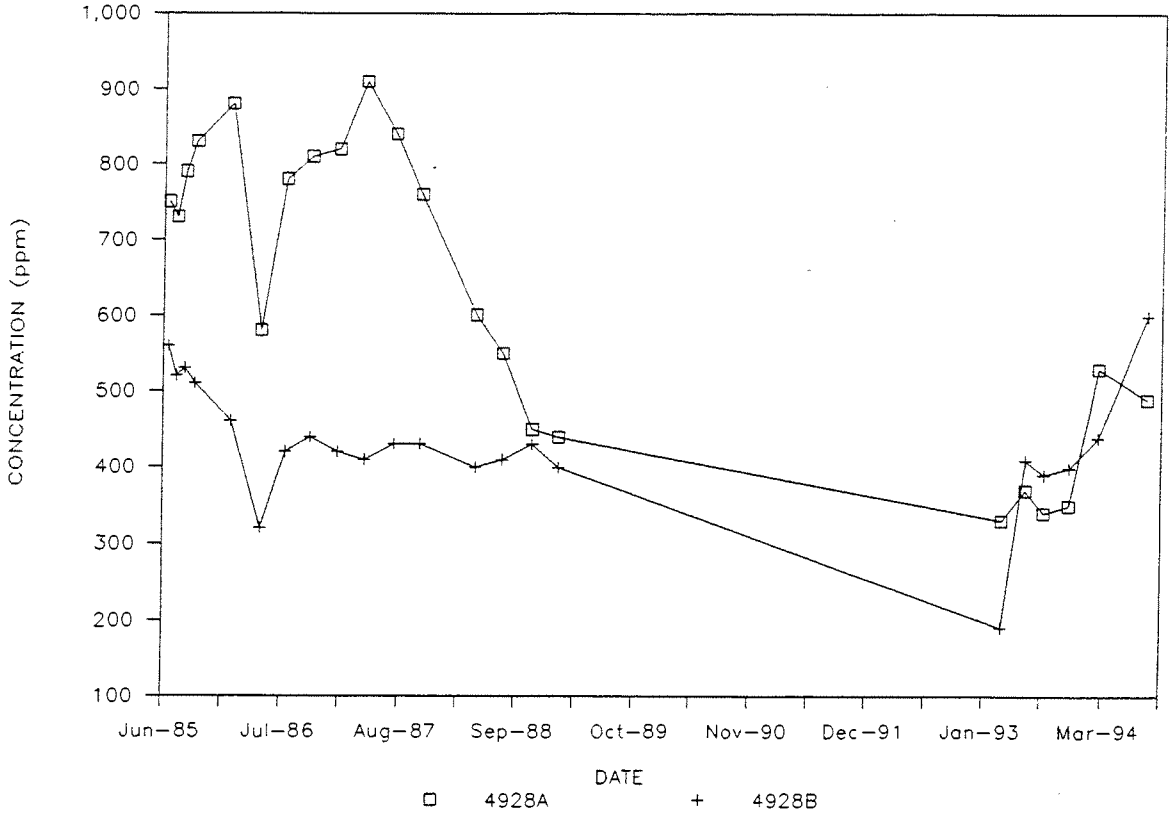
LEGEND

\+ Historical Data
\# 1994 Data

JOB 2702.20846.0001 DATE 1-10-95 F.T. ____ DR. ____ O.E. SCG CHKD ____

TDS

WATER QUALITY HISTORY



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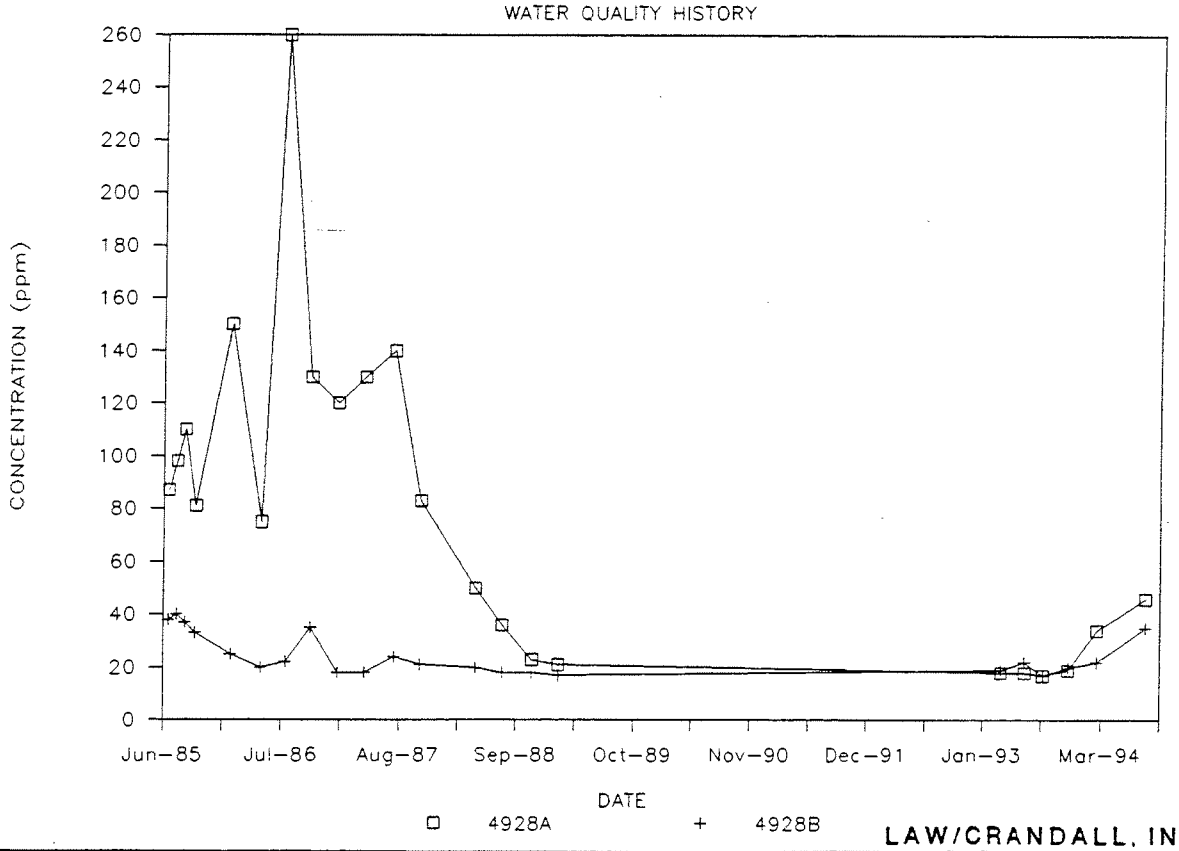
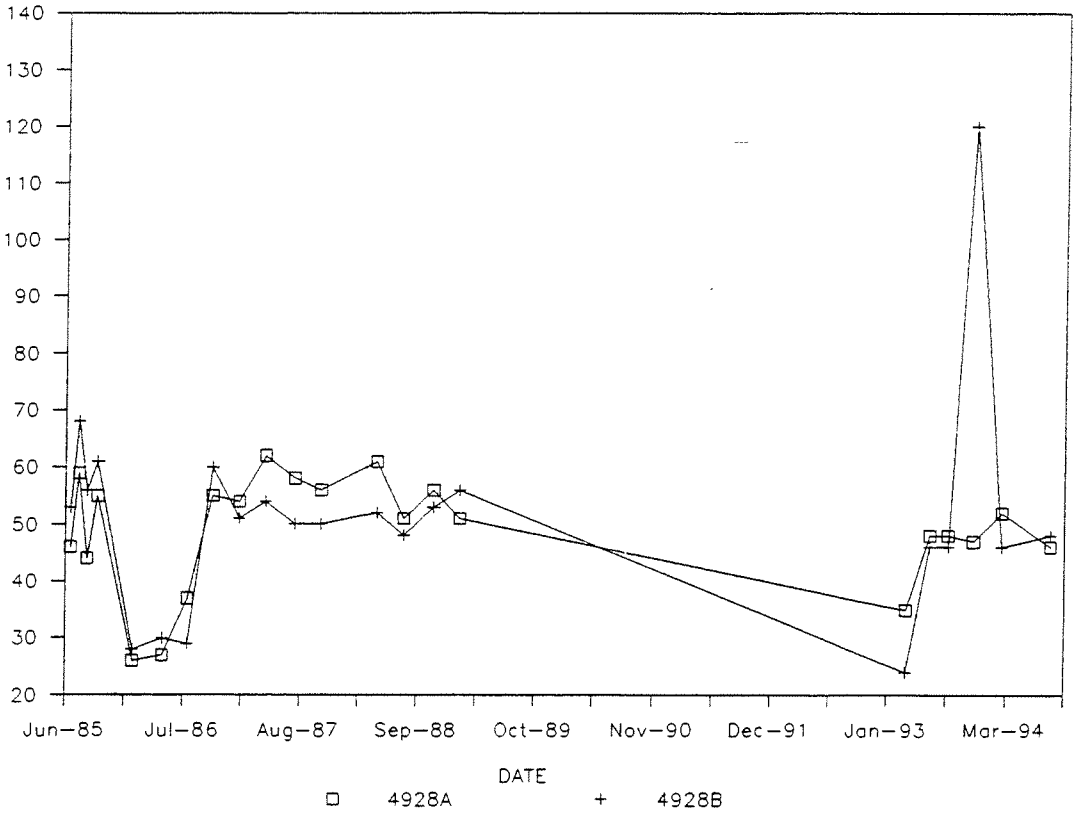


LAW/CRANDALL, INC.

JOB 2702.20346.0001 DATE 1-10-95 F.T. ____ DR. ____ O.E. SLS CHKD ____

SO4

WATER QUALITY HISTORY



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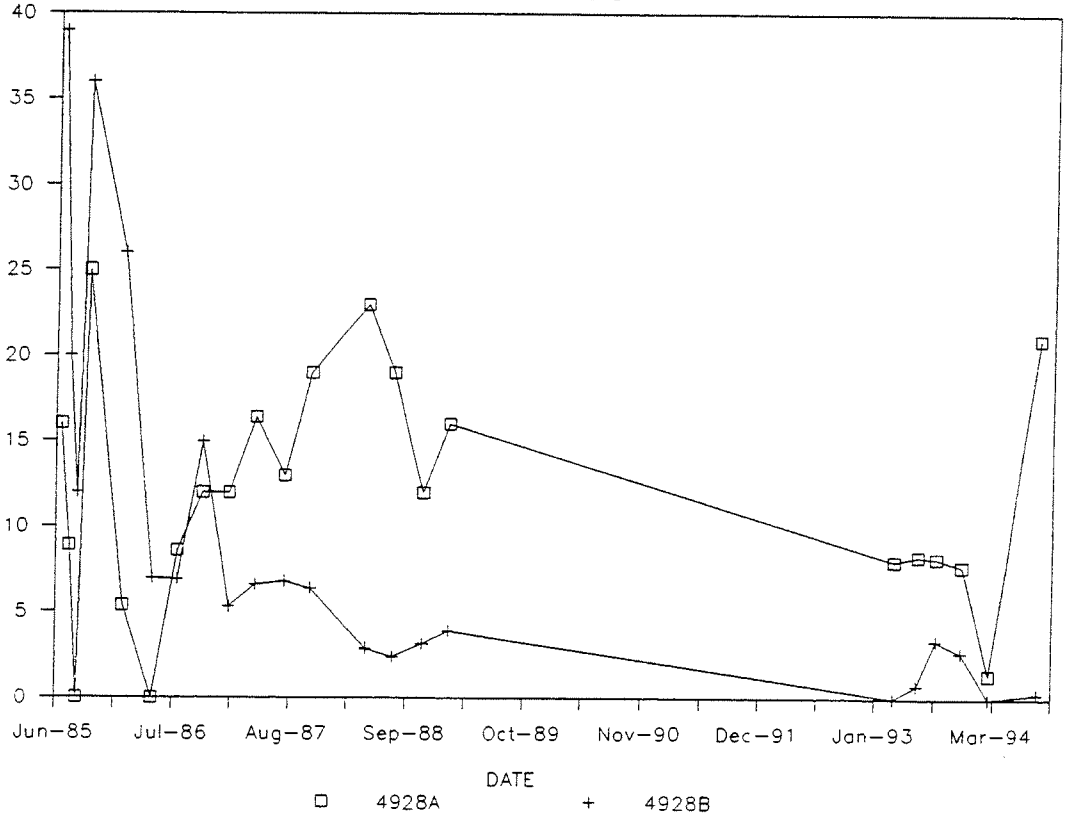
WATER QUALITY HISTORY

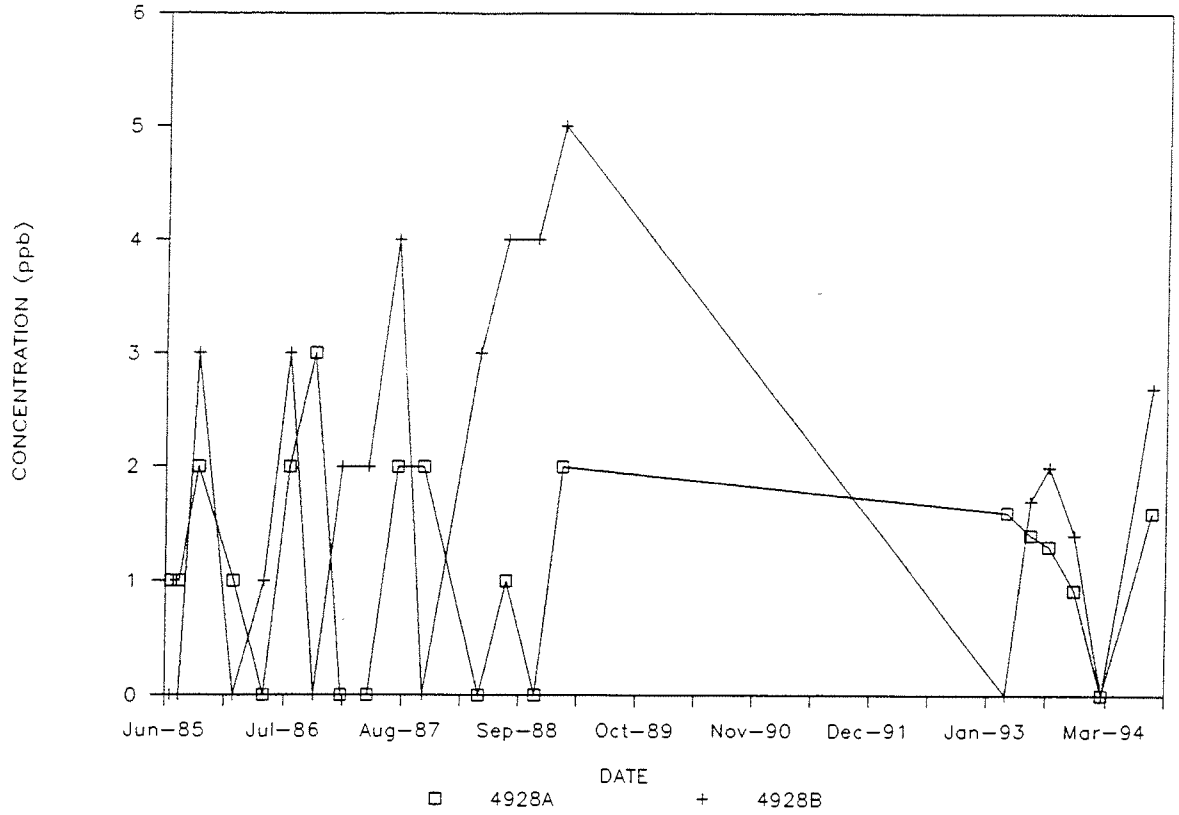


LAW/CRANDALL, INC.

JOB 2702.20346.0001 DATE 1-10-96 F.T. ____ DR. ____ O.E. SCS CHKD ____

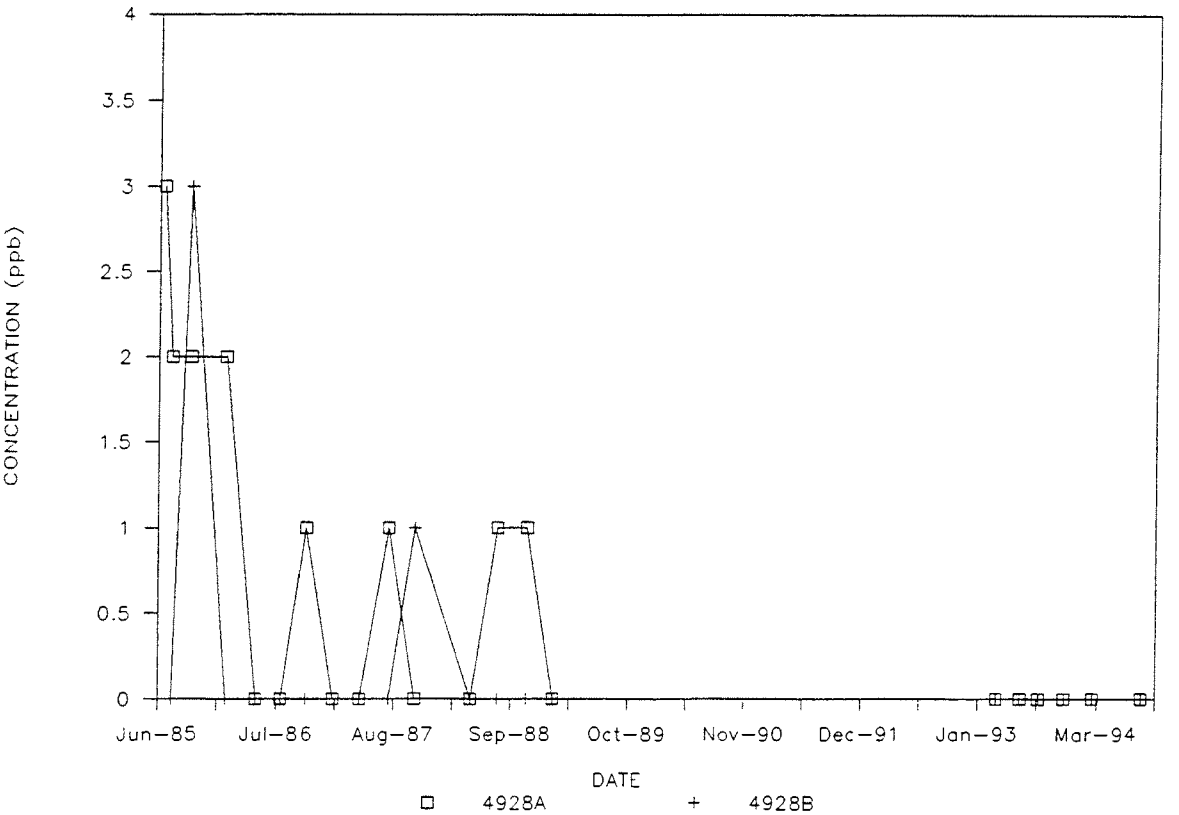
PCE

WATER QUALITY HISTORY



1,2DCA

WATER QUALITY HISTORY



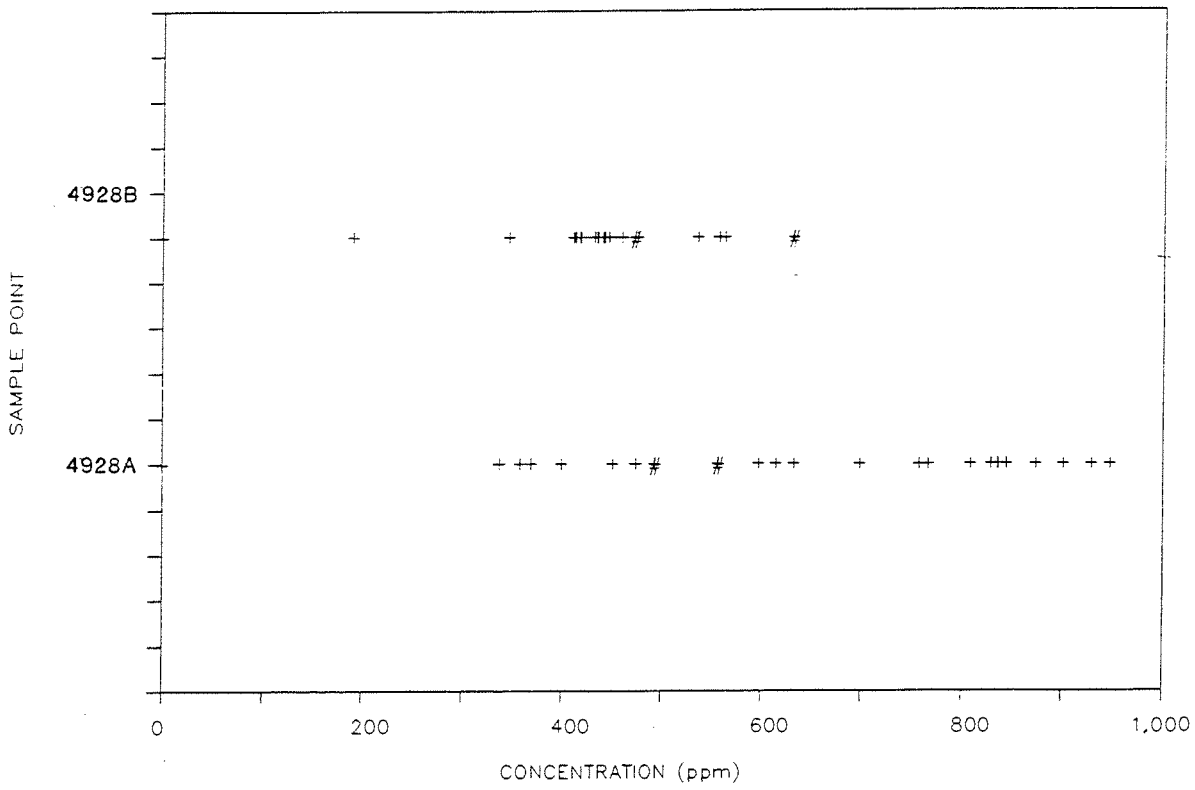
LAW/CRANDALL, INC.

CONFIDENTIAL

JOB 2702.20346.0001 DATE 1-10-96 F.T. _____ DR. _____ O.E. SCS CHKD _____

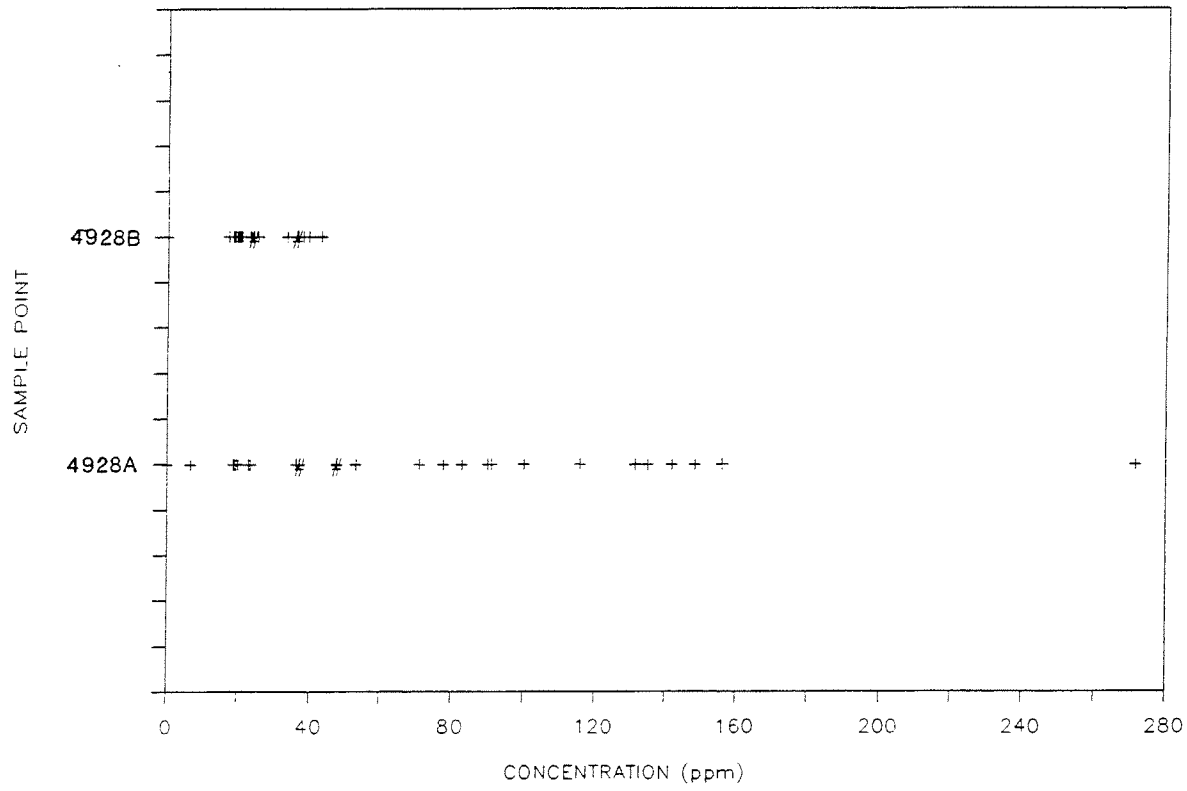
TDS

STATISTICAL DISTRIBUTION



Cl

STRATHERN LANDFILL



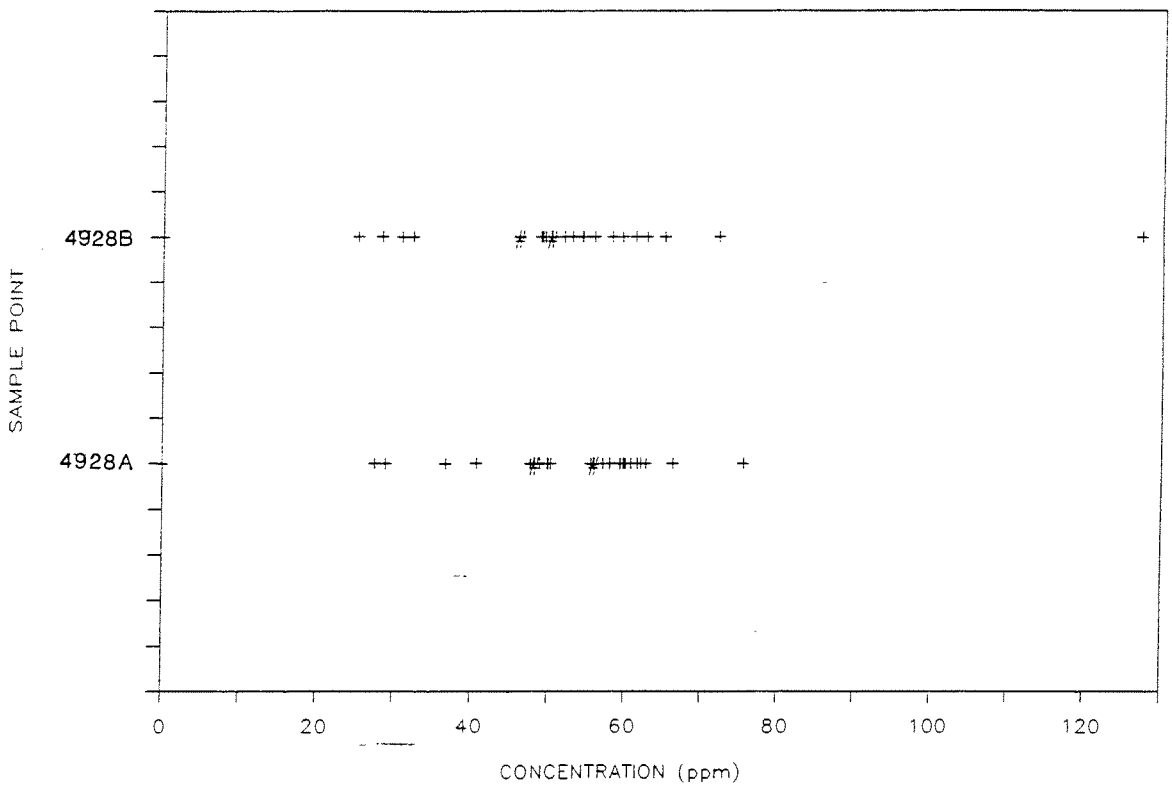
LAW/CRANDALL, INC.

CONFIDENTIAL

JOB 2702.20346.0001 DATE 1-10-95 F.T. _____ DR. _____ O.E. SAS CHKD _____

SO4

STRATHERN LANDFILL



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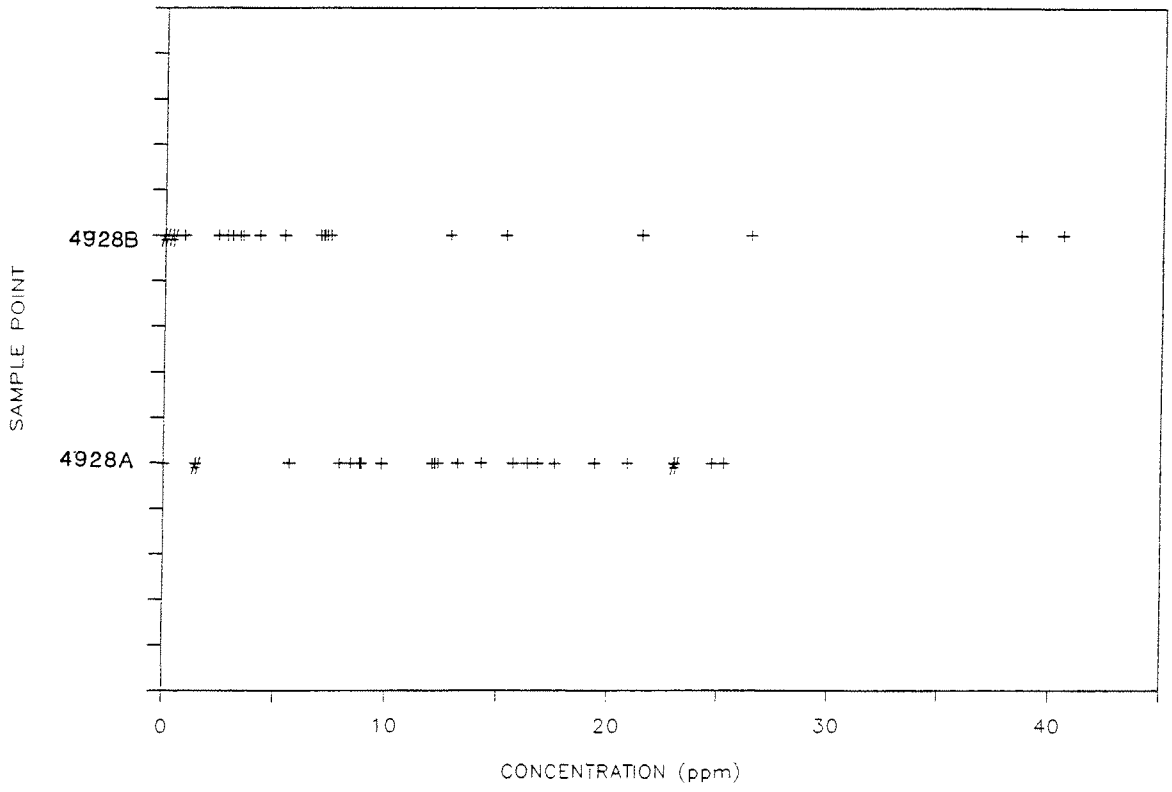


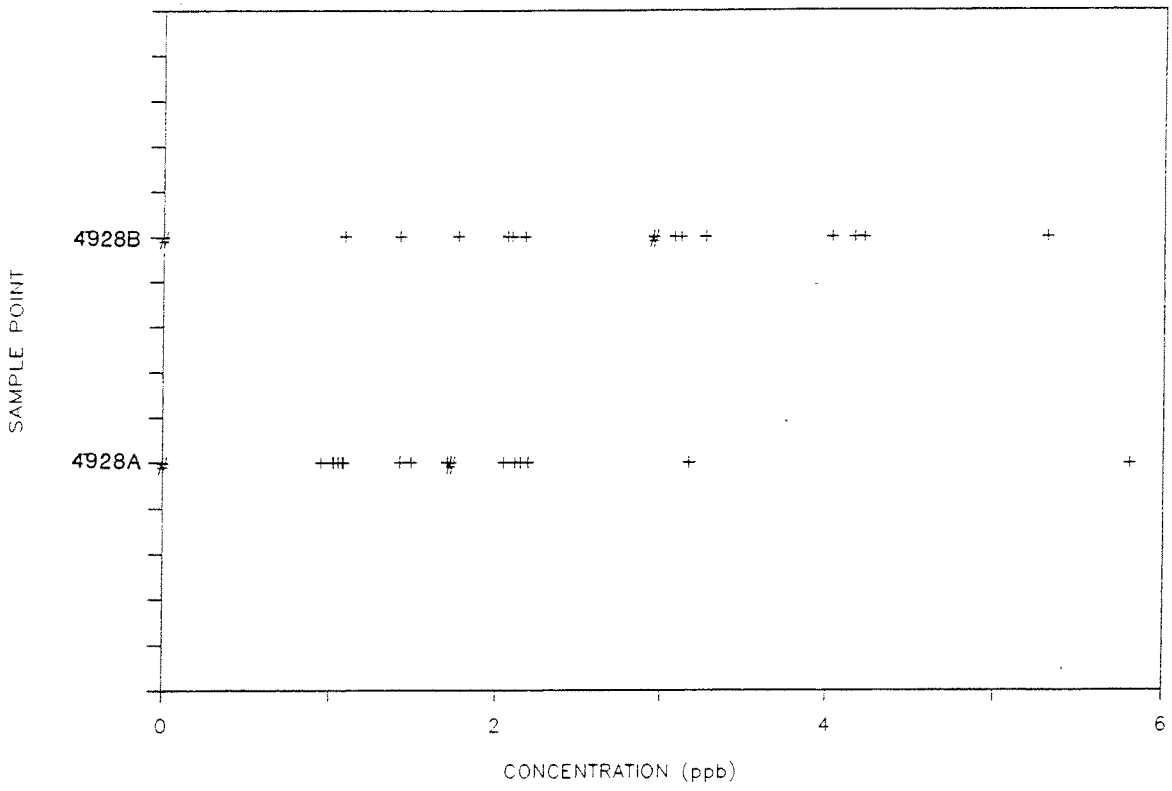
LAW/CRANDALL, INC.

CONFIDENTIAL

JOB 2702.20346.0001 DATE 1-10-95 F.T. _____ DR. _____ O.E. SAS CHKD _____

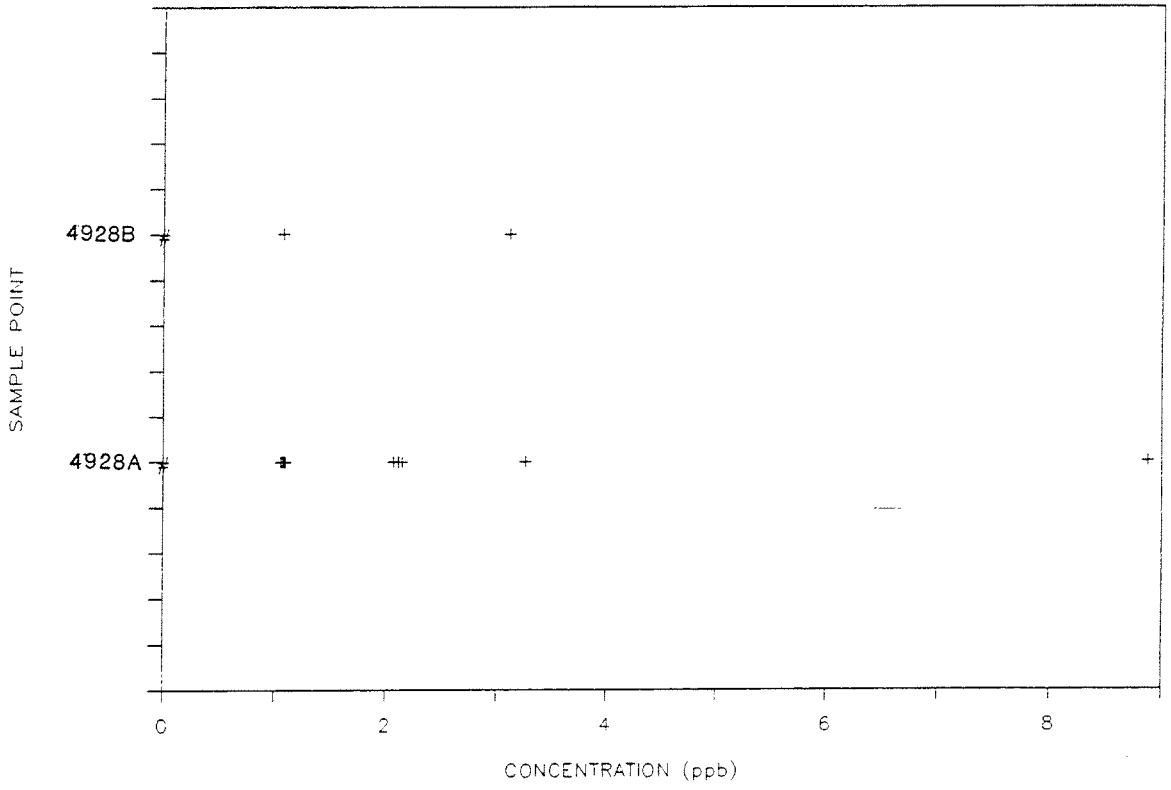
PCE

STRATHERN LANDFILL



1,2DCA

STRATHERN LANDFILL



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APPENDIX D

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain of Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. All packages sent to the laboratory shall be accompanied by the Chain of Custody Record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX E

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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B C Analytical

ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mailed: MAR 9 1994

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-370-1	4928A	21 FEB 94
02-370-2	4928B	21 FEB 94

PARAMETER	02-370-1	02-370-2
Furnace Digestion (3020), Date	02/28/94	02/28/94
Digestion (3010), Date	02/28/94	02/28/94
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	350	350
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	350	350
Calcium (6010), mg/L	100	100
Magnesium (6010), mg/L	24	27
Chloride (325.3), mg/L	34	22
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	1.6	<0.1
Iron (6010), mg/L	0.76	87
Manganese (6010), mg/L	0.030	2.7
pH (150.1/9040), Units	7.1	7.1
Potassium (6010), mg/L	5.9	6.0
Sodium (6010), mg/L	45	38
Sulfate (375.4), mg/L	52	46
Conductivity (120.1), umhos/cm	830	730
Dissolved Solids (160.1), mg/L	530	440
Zinc (6010), mg/L	0.48	4.0
Ion Balance, Percent	0.14	2.41

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-370-1	4928A	21 FEB 94
02-370-2	4928B	21 FEB 94

PARAMETER	02-370-1	02-370-2
Nitrate (353.2)		
Nitrate (as N), mg/L	0.32	<0.05
Nitrate (as NO3), mg/L	1.4	<0.2
Aluminum (6010), mg/L	<0.1	2.5
Fluoride (340.2), mg/L	0.26	0.25
Boron, mg/L	0.30	0.25
Cadmium (7131), mg/L	<0.001	<0.001
Chromium (6010), mg/L	<0.01	0.023
Lead (7421), mg/L	0.0039	0.013
Nickel (6010), mg/L	<0.04	<0.04
EPA 8020		
Date Analyzed	03/04/94	03/04/94
Date Confirmed	03/04/94	03/04/94
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-370-1	4928A	21 FEB 94
02-370-2	4928B	21 FEB 94

PARAMETER	02-370-1	02-370-2
Halocarbons/EPA 8010		
Date Analyzed	03/04/94	03/04/94
Date Confirmed	03/04/94	03/04/94
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<0.5	<0.5
Freon 113, ug/L	<1	<1

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-370-1	4928A	21 FEB 94
02-370-2	4928B	21 FEB 94

PARAMETER	02-370-1	02-370-2
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	<0.5
Trichlorofluoromethane, ug/L	<0.5	2.1
Tetrachloroethene, ug/L	<0.5	<0.5
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

James C. Hein, Laboratory Director

BCA

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 94-02-370-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 21 FEB 94

Anions	mg/L	meq/L
Nitrate (as NO3)	1.4	0.023
Chloride (325.3)	34	0.96
Sulfate (375.4)	52	1.1
Bicarbonate (as HCO3)	430	7
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		9.1

Cations	mg/L	meq/L
Magnesium (6010)	24	2
Sodium (6010)	45	2
Potassium (6010)	5.9	0.15
Calcium (6010)	100	5
Total Millequivalents per Liter		9.2

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	350
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	99
Total Hardness	349
Iron (6010)	0.76
Manganese (6010)	0.030
Copper (6010)	<0.02
Zinc (6010)	0.48
Surfactants, MBAS (425.1)	1.6
Dissolved Solids (160.1)	530
Sp. Conductance, umhos/cm	830
pH (150.1/9040), units	7.1
Ion balance in percent	0.14

* Conforms to Title 22, California Administrative Code

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-02-370

Received: 22 FEB 94

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 94-02-370-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 21 FEB 94

Anions	mg/L	meq/L
Nitrate (as NO3)	<0.2	<0.0032
Chloride (325.3)	22	0.62
Sulfate (375.4)	46	0.96
Bicarbonate (as HCO3)	430	7
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		8.6

Cations	mg/L	meq/L
Magnesium (6010)	27	2.2
Sodium (6010)	38	1.7
Potassium (6010)	6.0	0.15
Calcium (6010)	100	5
Total Millequivalents per Liter		9.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	350
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	110
Total Hardness	360
Iron (6010)	87
Manganese (6010)	2.7
Copper (6010)	<0.02
Zinc (6010)	4.0
Surfactants, MBAS (425.1)	<0.1
Dissolved Solids (160.1)	440
Sp. Conductance, umhos/cm	730
pH (150.1/9040), units	7.1
Ion balance in percent	2.41

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004120

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

DATE REPORTED : 03/09/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Alkalinity (E310.1)						
Bicarbonate Alk (as CaCO3)	02.28.94	9412	571	596	mg/L	96
Total Alkalinity (as CaCO3)	02.28.94	9412	571	596	mg/L	96
Alkalinity (E310.1)						
Bicarbonate Alk (as CaCO3)	02.28.94	9412	571	596	mg/L	96
Total Alkalinity (as CaCO3)	02.28.94	9412	571	596	mg/L	96
Calcium (6010)	02.28.94	94235	48.8	50.0	mg/L	98
Magnesium (6010)	02.28.94	94235	45.0	50.0	mg/L	90
Chloride (EPA 325.3)						
Chloride (325.3)	02.23.94	9413	19.5	20	mg/L	98
Copper (6010)	02.28.94	94235	850	1000	ug/L	85
Copper (6010)	02.28.94	94235	0.850	1.00	mg/L	85
MBAS (EPA 425.1)						
Surfactants, MBAS (425.1)	02.15.94	9423	0.972	1.00	mg/L	97
Iron (6010)	02.28.94	94235	4.55	5.00	mg/L	91
Manganese (6010)	02.28.94	94235	0.918	1.00	mg/L	92
pH (EPA 150.1)						
pH (150.1/9040)	02.22.94	94114	6.04	6.00	Units	101
pH (field)	02.28.94	94114	6.04	6.00	Units	101
Potassium (6010)	02.28.94	94235	43.6	50.0	mg/L	87
Sodium (6010)	02.28.94	94235	46.1	50.0	mg/L	92
Sulfate (EPA 375.4)						
Sulfate (375.4)	02.25.94	9411	19.4	20	mg/L	97
Conductivity (120.1)	03.01.94	9432	1400	1413	umhos/cm	99
TDS (EPA 160.1)						
Dissolved Solids (160.1)	02.26.94	9422	1020	1000	mg/L	102
Zinc (6010)	02.28.94	94235	898	1000	ug/L	90
Zinc (6010)	02.28.94	94235	0.898	1.00	mg/L	90
Nitrate + nitrite (353.2)	02.23.94	9470	19.5	20.0	mg/L	98
Nitrate (EPA 353.2)						
Nitrate (as N)	02.23.94	9470	4.60	4.51	mg/L	102
Nitrate (as NO3)	02.23.94	9470	20.4	20.0	mg/L	102
Aluminum (6010)	02.28.94	94235	4.42	5.00	mg/L	88
Fluoride (EPA 340.2)						
Fluoride (340.2)	02.24.94	9407	0.964	1.00	mg/L	96
Boron	02.28.94	94235	0.915	1.00	mg/L	92
Cadmium (7131)	03.01.94	94238	0.0032	0.0030	mg/L	107

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

DATE REPORTED : 03/09/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Chromium (6010)	02.28.94	94235	890	1000	ug/L	89
Chromium (6010)	02.28.94	94235	0.890	1.00	mg/L	89
Lead (7421)	02.28.94	94238	0.0487	0.0500	mg/L	97
Nickel (6010)	02.28.94	94235	886	1000	ug/L	89
Nickel (6010)	02.28.94	94235	0.886	1.00	mg/L	89
EPA 8020						
1,2-Dichlorobenzene	03.05.94	94014	20.1	20.0	ug/L	101
1,3-Dichlorobenzene	03.05.94	94014	19.1	20.0	ug/L	96
1,4-Dichlorobenzene	03.05.94	94014	19.7	20.0	ug/L	99
Benzene	03.05.94	94014	20.7	20.0	ug/L	104
Chlorobenzene	03.05.94	94014	22.8	20.0	ug/L	114
Ethylbenzene	03.05.94	94014	21.3	20.0	ug/L	107
Toluene	03.05.94	94014	21.1	20.0	ug/L	106
Total Xylene Isomers	03.05.94	94014	63.1	60.0	ug/L	105
EPA 8020						
1,2-Dichlorobenzene	03.05.94	94014	19.8	20.0	ug/L	99
1,3-Dichlorobenzene	03.05.94	94014	19.6	20.0	ug/L	98
1,4-Dichlorobenzene	03.05.94	94014	19.8	20.0	ug/L	99
Benzene	03.05.94	94014	21.9	20.0	ug/L	110
Chlorobenzene	03.05.94	94014	23.4	20.0	ug/L	117
Ethylbenzene	03.05.94	94014	22.0	20.0	ug/L	110
Toluene	03.05.94	94014	22.1	20.0	ug/L	111
Total Xylene Isomers	03.05.94	94014	65.0	60.0	ug/L	108

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

)ATE REPORTED : 03/09/94

MATRIX QC PRECISION (DUPLICATES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE %DIFF
)H (EPA 150.1)						
pH (150.1/9040)	02.22.94	94114	7.6	7.6	Units	0
pH (field)	02.28.94	94114	9.35	9.35	Units	0
Conductivity (120.1)	03.01.94	9432	890	890	umhos/cm	0

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

)ATE REPORTED : 03/09/94

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Alkalinity (E310.1)						
Carbonate Alk (as CaCO3)	02.28.94	9412	<1	<1	mg/L	NA
Bicarbonate Alk (as CaCO3)	02.28.94	9412	640	640	mg/L	0
Hydroxide Alk (as CaCO3)	02.28.94	9412	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)	02.28.94	9412	640	640	mg/L	0
Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	02.28.94	9412	<1	<1	mg/L	NA
Bicarbonate Alk (as CaCO3)	02.28.94	9412	631	638	mg/L	1
Hydroxide Alk (as CaCO3)	02.28.94	9412	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)	02.28.94	9412	631	638	mg/L	1
Calcium (6010)	02.28.94	94235	139	145	mg/L	4
Magnesium (6010)	02.28.94	94235	65.3	67.7	mg/L	4
Chloride (EPA 325.3)						
Chloride (325.3)	02.23.94	9413	248	248	mg/L	0
Copper (6010)	02.28.94	94235	410	421	ug/L	3
Copper (6010)	02.28.94	94235	0.414	0.430	mg/L	4
MBAS (EPA 425.1)						
Surfactants, MBAS (425.1)	02.15.94	9423	0.877	0861	mg/L	200
Iron (6010)	02.28.94	94235	0.967	1.02	mg/L	5
Manganese (6010)	02.28.94	94235	0.0722	0.0749	mg/L	4
Potassium (6010)	02.28.94	94235	14.0	14.5	mg/L	4
Sodium (6010)	03.02.94	94235	86.5	89.3	mg/L	3
Sulfate (EPA 375.4)						
Sulfate (375.4)	02.25.94	9411	157	150	mg/L	5
TDS (EPA 160.1)						
Dissolved Solids (160.1)	02.26.94	9422	2740	2750	mg/L	0
Zinc (6010)	02.28.94	94235	404	411	ug/L	2
Zinc (6010)	02.28.94	94235	0.865	0.900	mg/L	4
Nitrate (EPA 353.2)						
Nitrate (as N)	02.23.94	9470	3.27	3.31	mg/L	1
Nitrate (as NO3)	02.23.94	9470	14.5	14.7	mg/L	1
Nitrate + nitrite (353.2)	02.23.94	9470	30.0	32.0	mg/L	6
Aluminum (6010)	02.28.94	94235	0.950	0.998	mg/L	5
Fluoride (EPA 340.2)						
Fluoride (340.2)	02.24.94	9407	1.14	1.09	mg/L	4
Boron	02.28.94	94235	1.93	2.02	mg/L	5
Cadmium (7131)	03.01.94	94238	0.0284	0.0300	mg/L	5

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BATCH QC REPORT
ORDER: G9402370

DATE REPORTED : 03/09/94

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Chromium (6010)	02.28.94	94235	153	152	ug/L	1
Chromium (6010)	02.28.94	94235	0.186	0.185	mg/L	1
Lead (7421)	02.28.94	94238	0.0218	0.0220	mg/L	1
Nickel (6010)	02.28.94	94235	308	303	ug/L	2
Nickel (6010)	02.28.94	94235	0.417	0.429	mg/L	3
EPA 8020						
Benzene	03.04.94	94014	25.9	26.9	ug/L	4
Chlorobenzene	03.04.94	94014	28.0	28.8	ug/L	3
Toluene	03.04.94	94014	25.7	26.6	ug/L	3
Halocarbons/EPA 8010						
1,1-Dichloroethene	03.04.94	94014	23.0	23.4	ug/L	2
Chlorobenzene	03.04.94	94014	27.3	27.0	ug/L	1
Trichloroethene	03.04.94	94014	28.2	28.2	ug/L	0

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BATCH QC REPORT
ORDER: G9402370

DATE REPORTED : 03/09/94

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Alkalinity (E310.1)							
Bicarbonate Alk (as CaCO3)	02.28.94	9412	640	642	170	mg/L	100
Total Alkalinity (as CaCO3)	02.28.94	9412	640	642	170	mg/L	100
Alkalinity (310.1)							
Bicarbonate Alk (as CaCO3)	02.28.94	9412	634.5	652	180	mg/L	96
Total Alkalinity (as CaCO3)	02.28.94	9412	634.5	652	180	mg/L	96
Calcium (6010)	02.28.94	94235	142	150	100	mg/L	84
Magnesium (6010)	02.28.94	94235	66.5	74.0	24	mg/L	85
Chloride (EPA 325.3)							
Chloride (325.3)	02.23.94	9413	248	240	140	mg/L	108
Copper (6010)	02.28.94	94235	415.5	500	<20	ug/L	83
Copper (6010)	02.28.94	94235	0.422	0.500	<0.02	mg/L	84
MBAS (EPA 425.1)							
Surfactants, MBAS (425.1)	02.15.94	9423	30.9385	1.00	<0.1	mg/L	43094
Iron (6010)	02.28.94	94235	0.9935	1.06	0.76	mg/L	SOR
Manganese (6010)	02.28.94	94235	0.0735	0.0800	0.030	mg/L	87
Potassium (6010)	02.28.94	94235	14.25	15.9	5.9	mg/L	84
Sodium (6010)	03.02.94	94235	87.9	95.0	45	mg/L	86
Sulfate (EPA 375.4)							
Sulfate (375.4)	02.25.94	9411	153.5	159	59	mg/L	95
TDS (EPA 160.1)							
Dissolved Solids (160.1)	02.26.94	9422	2745	2770	770	mg/L	99
Zinc (6010)	02.28.94	94235	407.5	532	32	ug/L	75
Zinc (6010)	02.28.94	94235	0.8825	0.980	0.48	mg/L	81
Nitrate (EPA 353.2)							
Nitrate (as N)	02.23.94	9470	3.29	3.39	2.5	mg/L	SOR
Nitrate (as NO3)	02.23.94	9470	14.6	15.0	11	mg/L	SOR
Nitrate + nitrite (353.2)	02.23.94	9470	31	28.9	21	mg/L	SOR
Aluminum (6010)	02.28.94	94235	0.974	1.00	<0.1	mg/L	97
Fluoride (EPA 340.2)							
Fluoride (340.2)	02.24.94	9407	1.115	1.12	0.12	mg/L	100
Boron	02.28.94	94235	1.975	2.30	0.30	mg/L	84
Cadmium (7131)	03.01.94	94238	0.0292	0.0250	<0.001	mg/L	117
Chromium (6010)	02.28.94	94235	152.5	200	<10	ug/L	76
Chromium (6010)	02.28.94	94235	0.1855	0.200	<0.01	mg/L	93
Lead (7421)	02.28.94	94238	0.0219	0.0239	0.0039	mg/L	90
Nickel (6010)	02.28.94	94235	305.5	500	<40	ug/L	61

SOR = Spike Out of Range
(relative to high sample concentration)

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

DATE REPORTED : 03/09/94

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Nickel (6010)	02.28.94	94235	0.423	0.500	<0.04	mg/L	85
EPA 8020							
Benzene	03.04.94	94014	26.4	25.0	<0.5	ug/L	106
Chlorobenzene	03.04.94	94014	28.4	25.0	<0.5	ug/L	114
Toluene	03.04.94	94014	26.15	25.0	<0.5	ug/L	105
Halocarbons/EPA 8010							
1,1-Dichloroethene	03.04.94	94014	23.2	25.0	<0.5	ug/L	93
Chlorobenzene	03.04.94	94014	27.15	25.0	<0.5	ug/L	109
Trichloroethene	03.04.94	94014	28.2	25.0	<0.5	ug/L	113

SOR = Spike Out of Range
(relative to high sample concentration)

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

ATE REPORTED : 03/09/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
urnace Digestion (3020)	02.28.94	94238	2/28/94	NA	Date	3020
ligestion (3010)	02.28.94	94235	2/28/94	NA	Date	3010
Alkalinity (E310.1)						
Date Analyzed	02.28.94	9412	2/28/94	NA	Date	310.1
Carbonate Alk (as CaCO3)	02.28.94	9412	<1	1	mg/L	310.1
Bicarbonate Alk (as CaCO3)	02.28.94	9412	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	02.28.94	9412	<1	1	mg/L	310.1
Total Alkalinity (as CaCO3)	02.28.94	9412	0	10	mg/L	310.1
Alkalinity (E310.1)						
Date Analyzed	02.28.94	9412	2/28/94	NA	Date	310.1
Carbonate Alk (as CaCO3)	02.28.94	9412	0	1	mg/L	310.1
Bicarbonate Alk (as CaCO3)	02.28.94	9412	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	02.28.94	9412	0	1	mg/L	310.1
Total Alkalinity (as CaCO3)	02.28.94	9412	0	10	mg/L	310.1
alcium (6010)	02.28.94	94235	0.18	0.5	mg/L	6010
Magnesium (6010)	02.28.94	94235	0.02	0.1	mg/L	6010
Chloride (EPA 325.3)						
Date Analyzed	02.23.94	9413	2/23/94	NA	Date	325.3
Chloride (325.3)	02.23.94	9413	0	0.5	mg/L	325.3
Copper (6010)	02.28.94	94235	0	20	ug/L	6010
opper (6010)	02.28.94	94235	0	0.02	mg/L	6010
BAS (EPA 425.1)						
Date Analyzed	02.15.94	9423	2/15/94	NA	Date	425.1
Surfactants, MBAS (425.1)	02.15.94	9423	0	0.1	mg/L	425.1
ron (6010)	03.01.94	94235	0.006	0.04	mg/L	6010
Manganese (6010)	02.28.94	94235	0	0.01	mg/L	6010
Potassium (6010)	02.28.94	94235	0	0.5	mg/L	6010
odium (6010)	02.28.94	94235	0	0.5	mg/L	6010
ulfate (EPA 375.4)						
Date Analyzed	02.25.94	9411	2/25/94	NA	Date	375.4
Sulfate (375.4)	02.25.94	9411	0	2	mg/L	375.4
DS (EPA 160.1)						
Date Analyzed	02.26.94	9422	2/26/94	NA	Date	160.1
Dissolved Solids (160.1)	02.26.94	9422	0	10	mg/L	160.1
inc (6010)	02.28.94	94235	0.003	0.01	mg/L	6010
Zinc (6010)	02.28.94	94235	3.0	0.01	ug/L	6010
Nitrate + nitrite (353.2)	02.23.94	9470	0	0.05	mg/L	353.2

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9402370

ATE REPORTED : 03/09/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
itrate (EPA 353.2)						
Date Analyzed	02.23.94	9470	2/23/94	NA	Date	353.2
Nitrate (as N)	02.23.94	9470	0	0.05	mg/L	353.2
Nitrate (as NO3)	02.23.94	9470	0	0.2	mg/L	353.2
luminum (6010)	02.28.94	94235	0	0.1	mg/L	6010
Fluoride (EPA 340.2)						
Date Analyzed	02.24.94	9407	2/24/94	NA	Date	340.2
Fluoride (340.2)	02.24.94	9407	0.019	0.05	mg/L	340.2
Boron	02.28.94	94235	0.010	0.05	mg/L	6010
Cadmium (7131)	03.01.94	94238	0	0.001	mg/L	7131
hromium (6010)	03.01.94	94235	0	10	ug/L	6010
hromium (6010)	02.28.94	94235	8.1	10	ug/L	6010
Chromium (6010)	02.28.94	94235	0.008	0.01	mg/L	6010
ead (7421)	02.28.94	94238	0	0.002	mg/L	7421
ickel (6010)	03.01.94	94235	20	40	ug/L	6010
Nickel (6010)	02.28.94	94235	8.7	40	ug/L	6010
Nickel (6010)	02.28.94	94235	0.009	0.04	mg/L	6010
PA 8020						
Date Analyzed	03.04.94	94014	3/04/94	NA	Date	8020
1,2-Dichlorobenzene	03.04.94	94014	0	0.5	ug/L	8020
1,3-Dichlorobenzene	03.04.94	94014	0	0.5	ug/L	8020
1,4-Dichlorobenzene	03.04.94	94014	0	0.5	ug/L	8020
Benzene	03.04.94	94014	0	0.5	ug/L	8020
Chlorobenzene	03.04.94	94014	0	0.5	ug/L	8020
Ethylbenzene	03.04.94	94014	0	0.5	ug/L	8020
Toluene	03.04.94	94014	0	0.5	ug/L	8020
Total Xylene Isomers	03.04.94	94014	0	1	ug/L	8020

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CHAIN OF CUSTODY RECORD

BCA Log Number 94-02-370

Client name	LAW / Crandall
Address	200 Citadel Dr.
City, State, Zip	LA Ca. 90040
Project or PO#	2702.20346.1
Phone #	(213) 889-5300
Report attention	RA Scroggins
Sampled by	Randy A. Scroggins

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gin. min.	601/602	B	Metals				Hazardous sample Special handling required	Remarks
	2-21-94	1015	GW	4928A	4	1	1	1	1					Send Bill To:
	1	1040	1	4928B	4	1	1	1	1					LA By-Products
														1810 E 25th St.
														LA. Ca. 90058
														ATTN:
														Mike M. All. Stor

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	LAW / Crandall	2.21.94	1115
Received by	[signature]	Samina Hussain	~~Law Crandall~~ BCA	2/21/94	1120
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G94-08-065

Received: 05 AUG 94

Mailed: AUG 25 1994

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Digestion (3010), Date	08/16/94	08/16/94
Furnace Digestion (3020), Date	08/11/94	08/11/94
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	330	500
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	330	500
Calcium (6010/200.7), mg/L	91	130
Magnesium (6010/200.7), mg/L	23	35
Chloride, mg/L	46	35
Copper (6010/200.7), mg/L	<0.03	<0.03
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010/200.7), mg/L	0.42	7.9
Manganese (6010/200.7), mg/L	<0.02	1.3
pH (150.1/9040), Units	7.0	6.8
Potassium (6010/200.7), mg/L	5.4	6.0
Sodium (6010/200.7), mg/L	39	39
Sulfate, mg/L	46	48
Conductivity (120.1), umhos/cm	820	1000
Dissolved Solids (160.1), mg/L	490	600
Zinc (6010/200.7), mg/L	0.48	1.2
Ion Balance, Percent	5.7	3.4

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-065

Received: 05 AUG 94

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Nitrate+Nitrite		
Nitrate+Nitrite (as NO3), mg/L	21	0.31
Nitrate+Nitrite (as N), mg/L	4.75	0.070
Aluminum (6010/200.7), mg/L	<0.05	<0.05
Fluoride, mg/L	0.48	0.41
Boron (6010/200.7), mg/L	0.26	0.27
Cadmium (7131/213.2), mg/L	<0.003	<0.003
Chromium (6010/200.7), mg/L	<0.006	<0.006
Lead (7421/239.2), mg/L	0.0053	0.017
Nickel (6010/200.7), mg/L	<0.005	<0.005
EPA 8020		
Date Analyzed	08/17/94	08/17/94
Date Confirmed	08/17/94	08/17/94
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	1.2
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

BCA

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LOG NO: G94-08-065

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Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Halocarbons/EPA 8010		
Date Analyzed	08/17/94	08/17/94
Date Confirmed	08/17/94	08/17/94
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	1.2
1,1-Dichloroethene, ug/L	<0.5	0.72
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.56
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5

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B C Analytical

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Fax: 818/247-9797

LOG NO: G94-08-065

Received: 05 AUG 94

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	1.1
Trichlorofluoromethane, ug/L	<0.5	1.1
Tetrachloroethene, ug/L	1.6	2.7
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

Carol S McClellan for
James C. Hein, Laboratory Director

BCA

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	08.09.94	9446	589	596	mg/L	99
Total Alkalinity (as CaCO3)	08.09.94	9446	589	596	mg/L	99
Chloride (EPA 325.3)						
Chloride	08.09.94	9455	21.8	20.0	mg/L	109
Surfactants, MBAS (425.1)	08.05.94	9490	0.786	1.00	mg/L	79
pH (150.1/9040)	08.06.94	94501	5.99	6.00	Units	100
Sulfate	08.05.94	9446	18	20	mg/L	90
Conductivity (120.1)	08.12.94	9499	1400	1410	umhos/cm	99
Dissolved Solids (160.1)	08.09.94	9475	1000	1000	mg/L	100
Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	08.10.94	94248	19.9	20	mg/L	100
Nitrate+Nitrite (as N)	08.10.94	94248	4.49	4.51	mg/L	100
Fluoride	08.08.94	9435	1.03	1.00	mg/L	103
Boron (6010/200.7)	08.18.94	941073	9.41	10.0	mg/L	94
EPA 8020						
1,2-Dichlorobenzene	08.18.94	94077	19.2	20.0	ug/L	96
1,3-Dichlorobenzene	08.18.94	94077	19.9	20.0	ug/L	100
1,4-Dichlorobenzene	08.18.94	94077	20.9	20.0	ug/L	105
Benzene	08.18.94	94077	22.0	20.0	ug/L	110
Chlorobenzene	08.18.94	94077	22.6	20.0	ug/L	113
Ethylbenzene	08.18.94	94077	21.0	20.0	ug/L	105
Toluene	08.18.94	94077	21.7	20.0	ug/L	109
Total Xylene Isomers	08.18.94	94077	65.9	60.0	ug/L	110
EPA 8020						
1,2-Dichlorobenzene	08.18.94	94077	20.4	20.0	ug/L	102
1,3-Dichlorobenzene	08.18.94	94077	20.4	20.0	ug/L	102
1,4-Dichlorobenzene	08.18.94	94077	22.4	20.0	ug/L	112
Benzene	08.18.94	94077	25.4	20.0	ug/L	127
Chlorobenzene	08.18.94	94077	23.7	20.0	ug/L	119
Ethylbenzene	08.18.94	94077	22.3	20.0	ug/L	112
Toluene	08.18.94	94077	22.8	20.0	ug/L	114
Total Xylene Isomers	08.18.94	94077	69.5	60.0	ug/L	116
Halocarbons/EPA 8010						
1,1,1-Trichloroethane	08.18.94	94077	18.9	20.0	ug/L	95
1,1,2,2-Tetrachloroethane	08.18.94	94077	21.6	20.0	ug/L	108
1,1,2-Trichloroethane	08.18.94	94077	22.4	20.0	ug/L	112

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1,1-Dichloroethane	08.18.94	94077	17.2	20.0	ug/L	86
1,1-Dichloroethene	08.18.94	94077	17.8	20.0	ug/L	89
1,2-Dichloroethane	08.18.94	94077	21.0	20.0	ug/L	105
1,2-Dichlorobenzene	08.18.94	94077	18.4	20.0	ug/L	92
1,2-Dichloropropane	08.18.94	94077	21.9	20.0	ug/L	110
1,3-Dichlorobenzene	08.18.94	94077	16.9	20.0	ug/L	85
1,4-Dichlorobenzene	08.18.94	94077	18.7	20.0	ug/L	94
Bromodichloromethane	08.18.94	94077	21.0	20.0	ug/L	105
Bromomethane	08.18.94	94077	13.7	20.0	ug/L	69
Bromoform	08.18.94	94077	21.0	20.0	ug/L	105
Chlorobenzene	08.18.94	94077	21.6	20.0	ug/L	108
Carbon Tetrachloride	08.18.94	94077	23.4	20.0	ug/L	117
Chloroethane	08.18.94	94077	15.6	20.0	ug/L	78
Chloroform	08.18.94	94077	15.2	20.0	ug/L	76
Chloromethane	08.18.94	94077	13.1	20.0	ug/L	66
Dibromochloromethane	08.18.94	94077	22.9	20.0	ug/L	115
Methylene chloride	08.18.94	94077	17.7	20.0	ug/L	89
Trichloroethene	08.18.94	94077	22.5	20.0	ug/L	113
Trichlorofluoromethane	08.18.94	94077	20.0	20.0	ug/L	100
Tetrachloroethene	08.18.94	94077	26.6	20.0	ug/L	133
Vinyl chloride	08.18.94	94077	13.0	20.0	ug/L	65
cis-1,3-Dichloropropene	08.18.94	94077	21.3	20.0	ug/L	107
trans-1,2-Dichloroethene	08.18.94	94077	17.0	20.0	ug/L	85
trans-1,3-Dichloropropene	08.18.94	94077	17.8	20.0	ug/L	89
Halocarbons/EPA 8010						
1,1,1-Trichloroethane	08.18.94	94077	23.0	20.0	ug/L	115
1,1,2,2-Tetrachloroethane	08.18.94	94077	21.7	20.0	ug/L	109
1,1,2-Trichloroethane	08.18.94	94077	21.4	20.0	ug/L	107
1,1-Dichloroethane	08.18.94	94077	17.7	20.0	ug/L	89
1,1-Dichloroethene	08.18.94	94077	17.4	20.0	ug/L	87
1,2-Dichloroethane	08.18.94	94077	22.5	20.0	ug/L	113
1,2-Dichlorobenzene	08.18.94	94077	19.3	20.0	ug/L	97
1,2-Dichloropropane	08.18.94	94077	23.4	20.0	ug/L	117
1,3-Dichlorobenzene	08.18.94	94077	18.5	20.0	ug/L	93
1,4-Dichlorobenzene	08.18.94	94077	19.9	20.0	ug/L	100
Bromodichloromethane	08.18.94	94077	22.0	20.0	ug/L	110
Bromomethane	08.18.94	94077	13.5	20.0	ug/L	68

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Bromoform	08.18.94	94077	21.4	20.0	ug/L	107
Chlorobenzene	08.18.94	94077	21.6	20.0	ug/L	108
Carbon Tetrachloride	08.18.94	94077	25.1	20.0	ug/L	126
Chloroethane	08.18.94	94077	14.7	20.0	ug/L	74
Chloroform	08.18.94	94077	23.7	20.0	ug/L	119
Chloromethane	08.18.94	94077	12.0	20.0	ug/L	60
Dibromochloromethane	08.18.94	94077	22.8	20.0	ug/L	114
Methylene chloride	08.18.94	94077	18.2	20.0	ug/L	91
Trichloroethene	08.18.94	94077	23.5	20.0	ug/L	118
Trichlorofluoromethane	08.18.94	94077	19.2	20.0	ug/L	96
Tetrachloroethene	08.18.94	94077	25.5	20.0	ug/L	128
Vinyl chloride	08.18.94	94077	12.2	20.0	ug/L	61
cis-1,3-Dichloropropene	08.18.94	94077	22.8	20.0	ug/L	114
trans-1,2-Dichloroethene	08.18.94	94077	17.6	20.0	ug/L	88
trans-1,3-Dichloropropene	08.18.94	94077	17.8	20.0	ug/L	89

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

MATRIX QC PRECISION (DUPLICATES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE %DIFF
pH (150.1/9040)	08.06.94	94501	6.8	6.9	Units	1
Conductivity (120.1)	08.12.94	9499	1700	1700	umhos/cm	0

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	08.09.94	9446	<1	<1	mg/L	NA
Bicarbonate Alk (as CaCO3)	08.09.94	9446	764	762	mg/L	0
Hydroxide Alk (as CaCO3)	08.09.94	9446	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)	08.09.94	9446	764	762	mg/L	0
Chloride (EPA 325.3)						
Chloride	08.09.94	9455	399	399	mg/L	0
Surfactants, MBAS (425.1)	08.05.94	9490	7.02	6.68	mg/L	5
Sulfate (EPA 375.4)						
Sulfate	08.05.94	9446	444	438	mg/L	1
Sulfate	08.05.94	9446	28.2	28.8	mg/L	2
Sulfate	08.05.94	9446	194	195	mg/L	1
Dissolved Solids (160.1)	08.09.94	9475	1560	1570	mg/L	1
Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	08.10.94	94248	15.9	16.66	mg/L	5
Nitrate+Nitrite (as N)	08.10.94	94248	3.60	3.75	mg/L	4
Fluoride	08.08.94	9435	1.54	1.54	mg/L	0
Boron (6010/200.7)	08.18.94	941073	9.76	10.2	mg/L	4
EPA 8020						
Benzene	08.17.94	94077	21.7	21.1	ug/L	3
Chlorobenzene	08.17.94	94077	23.6	22.5	ug/L	5
Toluene	08.17.94	94077	21.7	21.0	ug/L	3
Halocarbons/EPA 8010						
1,1-Dichloroethene	08.17.94	94077	23.6	22.0	ug/L	7
Chlorobenzene	08.17.94	94077	22.0	21.0	ug/L	5
Trichloroethene	08.17.94	94077	22.2	21.7	ug/L	2

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Alkalinity (310.1)							
Bicarbonate Alk (as CaCO3)	08.09.94	9446	763	772	300	mg/L	98
Total Alkalinity (as CaCO3)	08.09.94	9446	763	772	300	mg/L	98
Chloride (EPA 325.3)							
Chloride	08.09.94	9455	399	390	290	mg/L	SOR
Surfactants, MBAS (425.1)	08.05.94	9490	6.85	6.60	4.6	mg/L	SOR
Sulfate (EPA 375.4)							
Sulfate	08.05.94	9446	441	460	260	mg/L	91
Sulfate	08.05.94	9446	28.5	31	11	mg/L	88
Sulfate	08.05.94	9446	194.5	200	100	mg/L	95
Dissolved Solids (160.1)	08.09.94	9475	1565	1580	580	mg/L	99
Nitrate+Nitrite							
Nitrate+Nitrite (as NO3)	08.10.94	94248	16.28	16.7	8.7	mg/L	95
Nitrate+Nitrite (as N)	08.10.94	94248	3.675	3.77	2.0	mg/L	95
Fluoride	08.08.94	9435	1.54	1.48	0.48	mg/L	106
Boron (6010/200.7)	08.18.94	941073	9.98	10.3	0.26	mg/L	97
EPA 8020							
Benzene	08.17.94	94077	21.4	25.0	<0.5	ug/L	86
Chlorobenzene	08.17.94	94077	23.05	25.0	<0.5	ug/L	92
Toluene	08.17.94	94077	21.35	25.0	<0.5	ug/L	85
Halocarbons/EPA 8010							
1,1-Dichloroethene	08.17.94	94077	22.8	25.0	<0.5	ug/L	91
Chlorobenzene	08.17.94	94077	21.5	25.0	<0.5	ug/L	86
Trichloroethene	08.17.94	94077	21.95	25.0	<0.5	ug/L	88

SOR = Spike Out of Range
(relative to high sample concentration)

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	08.09.94	9446	<1	1	mg/L	310.1
Bicarbonate Alk (as CaCO3)	08.09.94	9446	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	08.09.94	9446	<1	1	mg/L	310.1
Total Alkalinity (as CaCO3)	08.09.94	9446	0	10	mg/L	310.1
Chloride (EPA 325.3)						
Date Analyzed	08.09.94	9455	8/09/94	NA	Date	325.3
Chloride	08.09.94	9455	0	0.5	mg/L	325.3
Surfactants, MBAS (425.1)	08.05.94	9490	0	0.1	mg/L	425.1
Sulfate	08.05.94	9446	0	2	mg/L	375.4
Dissolved Solids (160.1)	08.09.94	9475	1	10	mg/L	160.1
Nitrate+Nitrite						
Nitrate+Nitrite (as NO3)	08.10.94	94248	0.17	0.2	mg/L	353.2
Nitrate+Nitrite (as N)	08.10.94	94248	0.038	0.05	mg/L	353.2
Fluoride	08.08.94	9435	0.027	0.05	mg/L	340.2
Boron (6010/200.7)	08.18.94	941073	0	0.05	mg/L	200.7
EPA 8020						
Date Analyzed	08.17.94	94077	8/17/94	NA	Date	8020
1,2-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
1,3-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
1,4-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
Benzene	08.17.94	94077	0	0.5	ug/L	8020
Chlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
Ethylbenzene	08.17.94	94077	0	0.5	ug/L	8020
Toluene	08.17.94	94077	0	0.5	ug/L	8020
Total Xylene Isomers	08.17.94	94077	0	1	ug/L	8020
Halocarbons/EPA 8010						
Date Analyzed	08.17.94	94077	8/17/94	NA	Date	8020
1,1,1-Trichloroethane	08.17.94	94077	0	NA	ug/L	8020
1,1,2,2-Tetrachloroethane	08.17.94	94077	0	NA	ug/L	8020
1,1,2-Trichloroethane	08.17.94	94077	0	NA	ug/L	8020
1,1-Dichloroethane	08.17.94	94077	0	NA	ug/L	8020
1,1-Dichloroethene	08.17.94	94077	0	NA	ug/L	8020
1,2-Dichloroethane	08.17.94	94077	0	NA	ug/L	8020
1,2-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
1,2-Dichloropropane	08.17.94	94077	0	NA	ug/L	8020
1,3-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9408065

DATE REPORTED : 08/25/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1,4-Dichlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
2-Chloroethylvinylether	08.17.94	94077	0	NA	ug/L	8020
Bromodichloromethane	08.17.94	94077	0	NA	ug/L	8020
Bromomethane	08.17.94	94077	0	NA	ug/L	8020
Bromoform	08.17.94	94077	0	NA	ug/L	8020
Chlorobenzene	08.17.94	94077	0	0.5	ug/L	8020
Carbon Tetrachloride	08.17.94	94077	0	NA	ug/L	8020
Chloroethane	08.17.94	94077	0	NA	ug/L	8020
Chloroform	08.17.94	94077	0	NA	ug/L	8020
Chloromethane	08.17.94	94077	0	NA	ug/L	8020
Dibromochloromethane	08.17.94	94077	0	NA	ug/L	8020
Dichlorodifluoromethane	08.17.94	94077	0	NA	ug/L	8020
Freon 113	08.17.94	94077	0	NA	ug/L	8020
Methylene chloride	08.17.94	94077	0	NA	ug/L	8020
Trichloroethene	08.17.94	94077	0	NA	ug/L	8020
Trichlorofluoromethane	08.17.94	94077	0	NA	ug/L	8020
Tetrachloroethene	08.17.94	94077	0	NA	ug/L	8020
Vinyl chloride	08.17.94	94077	0	NA	ug/L	8020
cis-1,2-Dichloroethene	08.17.94	94077	0	NA	ug/L	8020
cis-1,3-Dichloropropene	08.17.94	94077	0	NA	ug/L	8020
trans-1,2-Dichloroethene	08.17.94	94077	0	NA	ug/L	8020
trans-1,3-Dichloropropene	08.17.94	94077	0	NA	ug/L	8020

BC ANALYTICAL

BATCH QC REPORT
ORDER: A9408111/G9408065

DATE REPORTED : 08/25/94

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Aluminum (6010/200.7)	08.17.94	94421	2.84	3.00	mg/L	95
Calcium (6010/200.7)	08.17.94	94421	45.7	50.0	mg/L	91
Chromium (6010/200.7)	08.17.94	94421	2.95	3.00	mg/L	98
Copper (6010/200.7)	08.17.94	942421	2.89	3.00	mg/L	96
Iron (6010/200.7)	08.17.94	94421	3.10	3.00	mg/L	103
Lead (7421/239.2)	08.11.94	94412	0.0643	0.0600	mg/L	107
Magnesium (6010/200.7)	08.17.94	94421	47.7	50.0	mg/L	95
Manganese (6010/200.7)	08.17.94	94421	2.67	3.00	mg/L	89
Nickel (6010/200.7)	08.17.94	94421	2.88	3.00	mg/L	96
Potassium (6010/200.7)	08.17.94	94421	46.8	50.0	mg/L	94
Sodium (6010/200.7)	08.17.94	94421	45.7	50.0	mg/L	91
Zinc (6010/200.7)	08.17.94	94421	2.75	3.00	mg/L	92

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BC ANALYTICAL

BATCH QC REPORT
ORDER: A9408111/G9408065

DATE REPORTED : 08/25/94

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Aluminum (6010/200.7)	08.17.94	94421	2.82	2.90	mg/L	3
Cadmium (7131/213.2)	08.17.94	94414	0.0121	0.0121	mg/L	0
Calcium (6010/200.7)	08.17.94	94421	139	139	mg/L	0
Chromium (6010/200.7)	08.17.94	94421	2.91	2.87	mg/L	1
Copper (6010/200.7)	08.17.94	942421	2.87	2.81	mg/L	2
Iron (6010/200.7)	08.17.94	94421	1.04	1.09	mg/L	5
Magnesium (6010/200.7)	08.17.94	94421	70.3	69.2	mg/L	2
Nickel (6010/200.7)	08.17.94	94421	2.84	2.79	mg/L	2
Potassium (6010/200.7)	08.17.94	94421	10.4	10.4	mg/L	0
Sodium (6010/200.7)	08.17.94	94421	83.8	84.1	mg/L	0
Zinc (6010/200.7)	08.17.94	94421	3.18	3.12	mg/L	2

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BC ANALYTICAL

BATCH QC REPORT
ORDER: A9408111/G9408065

DATE REPORTED : 08/25/94

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCEN RECOVER
Aluminum (6010/200.7)	08.17.94	94421	2.86	3.00	<0.05	mg/L	
Cadmium (7131/213.2)	08.17.94	94414	0.0121	0.0100	<0.003	mg/L	1
Calcium (6010/200.7)	08.17.94	94421	139	141	91	mg/L	
Chromium (6010/200.7)	08.17.94	94421	2.89	3.00	<0.006	mg/L	
Copper (6010/200.7)	08.17.94	942421	2.84	3.00	<0.03	mg/L	
Iron (6010/200.7)	08.17.94	94421	1.065	0.92	0.42	mg/L	1
Magnesium (6010/200.7)	08.17.94	94421	69.75	73.1	23	mg/L	
Manganese (6010/200.7)	08.17.94	94421	2.62	3.00	<0.02	mg/L	
Nickel (6010/200.7)	08.17.94	94421	2.815	3.00	<0.005	mg/L	
Potassium (6010/200.7)	08.17.94	94421	10.4	10.4	5.4	mg/L	1
Sodium (6010/200.7)	08.17.94	94421	83.95	89.2	39	mg/L	
Zinc (6010/200.7)	08.17.94	94421	3.15	3.48	0.48	mg/L	

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BC ANALYTICAL

BATCH QC REPORT
ORDER: A9408111/G9408065

DATE REPORTED : 08/25/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Aluminum (6010/200.7)	08.17.94	94421	0.064	0.05	mg/L	6010
Cadmium (7131/213.2)	08.17.94	94414	0.0	0.0003	mg/L	7131
Calcium (6010/200.7)	08.17.94	94421	0.43	0.06	mg/L	6010
Chromium (6010/200.7)	08.17.94	94421	0.0	0.006	mg/L	6010
Copper (6010/200.7)	08.17.94	942421	0.0	0.03	mg/L	6010
Iron (6010/200.7)	08.17.94	94421	0.034	0.04	mg/L	6010
Lead (7421/239.2)	08.11.94	94412	0.0	0.003	mg/L	7421
Magnesium (6010/200.7)	08.17.94	94421	0.058	0.03	mg/L	6010
Manganese (6010/200.7)	08.17.94	94421	0.0	0.002	mg/L	6010
Nickel (6010/200.7)	08.17.94	94421	0.0012	0.005	mg/L	6010
Potassium (6010/200.7)	08.17.94	94421	0.042	0.09	mg/L	6010
Sodium (6010/200.7)	08.17.94	94421	0.29	0.4	mg/L	6010
Zinc (6010/200.7)	08.17.94	94421	0.067	0.01	mg/L	6010

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CHAIN OF CUSTODY RECORD

BCA Log Number G94-08-065

Client name: LAW / Crandall
Address: 200 Citadel Dr.
City, State, Zip: LA Ca 90040
Project or PO#: 2702.20346.1
Phone #: (213) 889-5300
Report attention: RA Scroggins
Sampled by: Randy A. Scroggins

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gen. Min	B	601/602	metals				Hazardous sample Special handling required	Remarks
	8.5	0930	GW	4928A	5	1	1	1	1					L.A. BY-PROD
	1	1015	1	4928B	5	1	1	1	1					Send Bill To:
														LA By-Products
														1810 E 25th ST.
														LA Ca 90058
														ATTN: Mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	LAW / Crandall	8.5.94	10:40
Received by	Susan Arrowsmith	S. ARROWSMITH	BC Analytical	8.5.94	10:40
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- [ ] 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
- [ ] 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- [ ] 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge GW—Groundweter SO—Soil PE—Petroleum

004147

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

GROUNDWATER MONITORING REPORT

THIRD QUARTER 1994

STRATHERN LANDFILL

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared for

Los Angeles By-Products Company

October 28, 1994

Law/Crandall Project No. 2702.20346.0001

004148

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

October 28, 1994

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Project No. 2702.20346.0001
RWQCB CI No. 7055

Attention: Mr. Mike McAllister

GROUNDWATER MONITORING REPORT
Third Quarter 1994
Strathern Landfill
Sun Valley District
Los Angeles, California

INTRODUCTORY SUMMARY

This report contains a summary of third quarter 1994 groundwater monitoring for Los Angeles By-Product Company's Strathern Landfill. Law/Crandall, Inc., monitors the levels and quality of groundwater at Strathern Landfill. Groundwater levels at the monitoring wells rose in response to precipitation during the winter months and spreading operations at the Hansen Spreading Grounds. Groundwater quality meets California Drinking Water Standards for the parameters measured, except for total dissolved solids, iron and manganese in well 4928B, and iron in well 4928.

SCOPE AND LIMITATIONS

Law/Crandall, Inc., measures groundwater levels, collects groundwater samples, analyzes laboratory results, and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, under the provisions of the Waste Discharge Requirement (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) No. 7055.

Law/Crandall, Inc., prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data, including a description of the site, monitoring requirements, and the groundwater monitoring well network.

Site Description

Los Angeles By-Products Company operates the Strathern Landfill, located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and broken asphalt. The site covers 34.7 acres and has a capacity of approximately 6,900,000 cubic yards. Strathern Landfill is located adjacent to Tuxford, Penrose, and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. The site is monitored to satisfy the requirements of Monitoring and Reporting Program (MRP) No. 7055, adopted by the RWQCB on July 22, 1991. The MRP requires semi-annual reporting on groundwater quality. This monitoring report covers this requirement for the third quarter of 1994.

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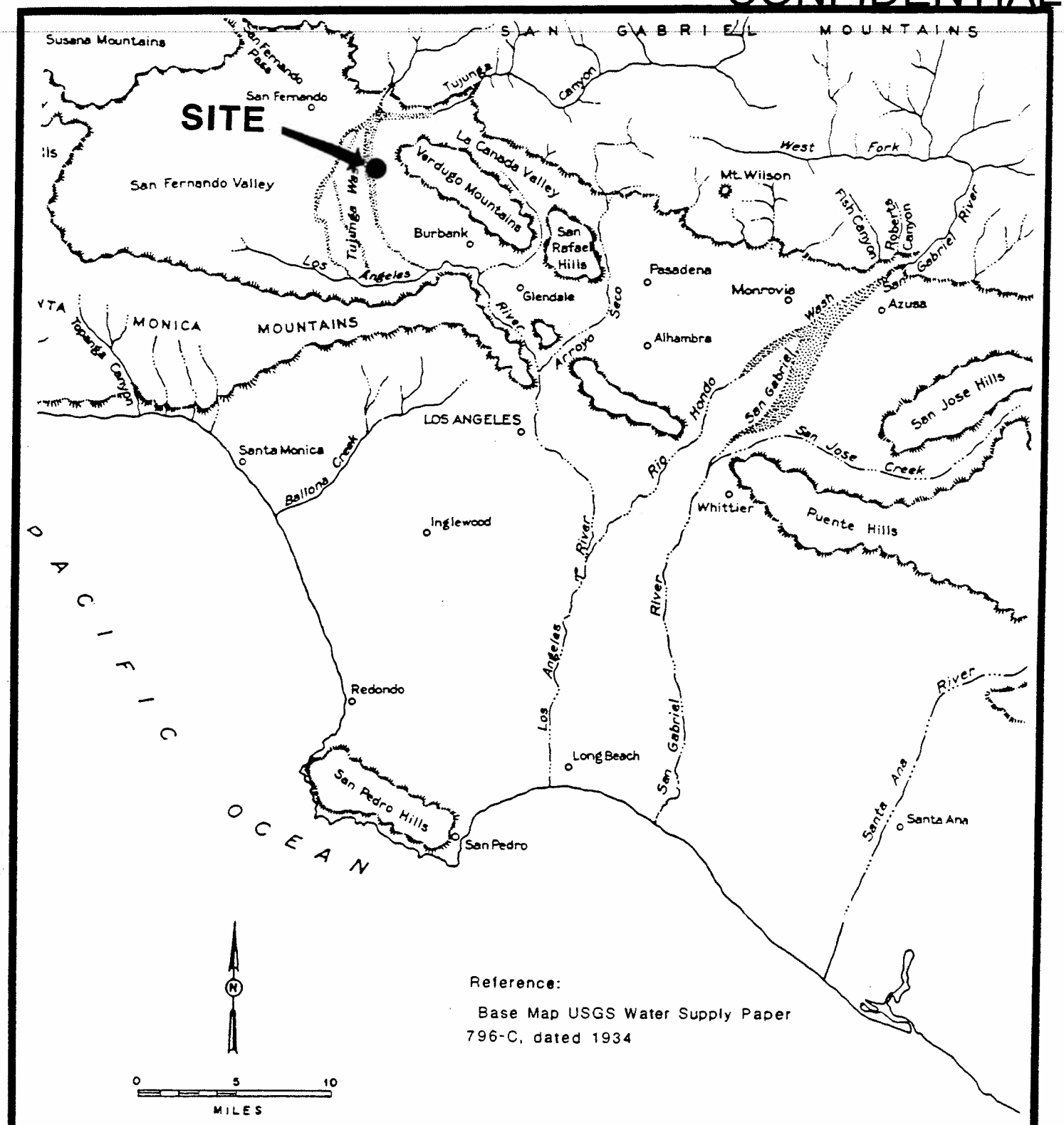

Reference:

Base Map USGS Water Supply Paper 796-C, dated 1934

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW CRANDALL, INC.

FIGURE 1

Law/Crandall, Inc., collected groundwater samples on August 5, 1994, and prepared this report. BC Analytical Laboratories analyzed the groundwater samples. All samples were analyzed at a laboratory certified for such analyses in accordance with Section 13176 of the California Water Code and current EPA 40 CFR, Part 261 Guidelines, or as specified in this Order. BC Analytical is certified for such analyses by the State Department of Health Services.

The Solid Waste Assessment Test (SWAT) Report was submitted to the RWQCB on July 1, 1989.

Monitoring Well Network

The groundwater monitoring well network for the site consists of two wells. Figure 2 shows locations of monitoring wells. Table 1 presents monitoring well construction details.

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS

WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the third quarter 1994 monitoring results, including levels and quality of groundwater.

Groundwater Levels

Law/Crandall, Inc., measured groundwater levels during the third quarter of 1994. Due to the winter rains and groundwater recharge operations, groundwater levels continued to rise

during the third quarter. The groundwater database in Appendix B contains the water level data. Figure 2 shows the groundwater levels and contours for the third quarter of 1994. Figure 3 shows hydrographs for both wells.

Groundwater Quality

We collected groundwater samples on August 5, 1994. Laboratory analyses indicate that the groundwater meets California Drinking Water Standards for the parameters measured, except for total dissolved solids, iron and manganese in well 4928B and iron in well 4928A. The pH levels have continued to decline in wells 4928A and 4928B. The more acidic groundwater (lower pH levels) in contact with rust particles in the well casings, may be the source of higher metals concentrations. The increase in carbon dioxide (CO_2) levels is an indicator of this type of activity. Trace amounts of several organic constituents were detected in well 4928A and 4928B. Table 2 compares groundwater quality for the third quarter of 1994 with California Drinking Water Standards.

TABLE 2

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
Third Quarter 1994

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE	
		4928A	4928B
Inorganic	**(ppm)**		
Total Dissolved Solids (TDS)	500	490	600
Chloride (Cl)	250	46	35
Sulfate (SO_4)	250	46	48
Nitrate (NO_3)	45	21	0.31
Iron (Fe)	0.3	0.42	7.9
Manganese (Mn)	0.05	<0.02	1.3
Zinc (Zn)	5	0.48	1.2
Organic	**(ppb)**		
Trichloroethylene (TCE)	5	<0.5	1.1
Tetrachloroethylene (PCE)	5	1.6	2.7
1,1-dichloroethane (1,1-DCA)	5	<0.5	1.2
1,2-dichloroethane (1,2-DCA)	0.5	<0.5	<0.5
1,1-dichloroethene (1,1-DCE)	6	<0.5	0.72
Carbon tetrachloride (CCl_4)	0.5	<0.5	<0.5
Trichlorofluoromethane	150	<0.5	1.1

* Source: CCR, Title 22, Division 4, Chapter 15

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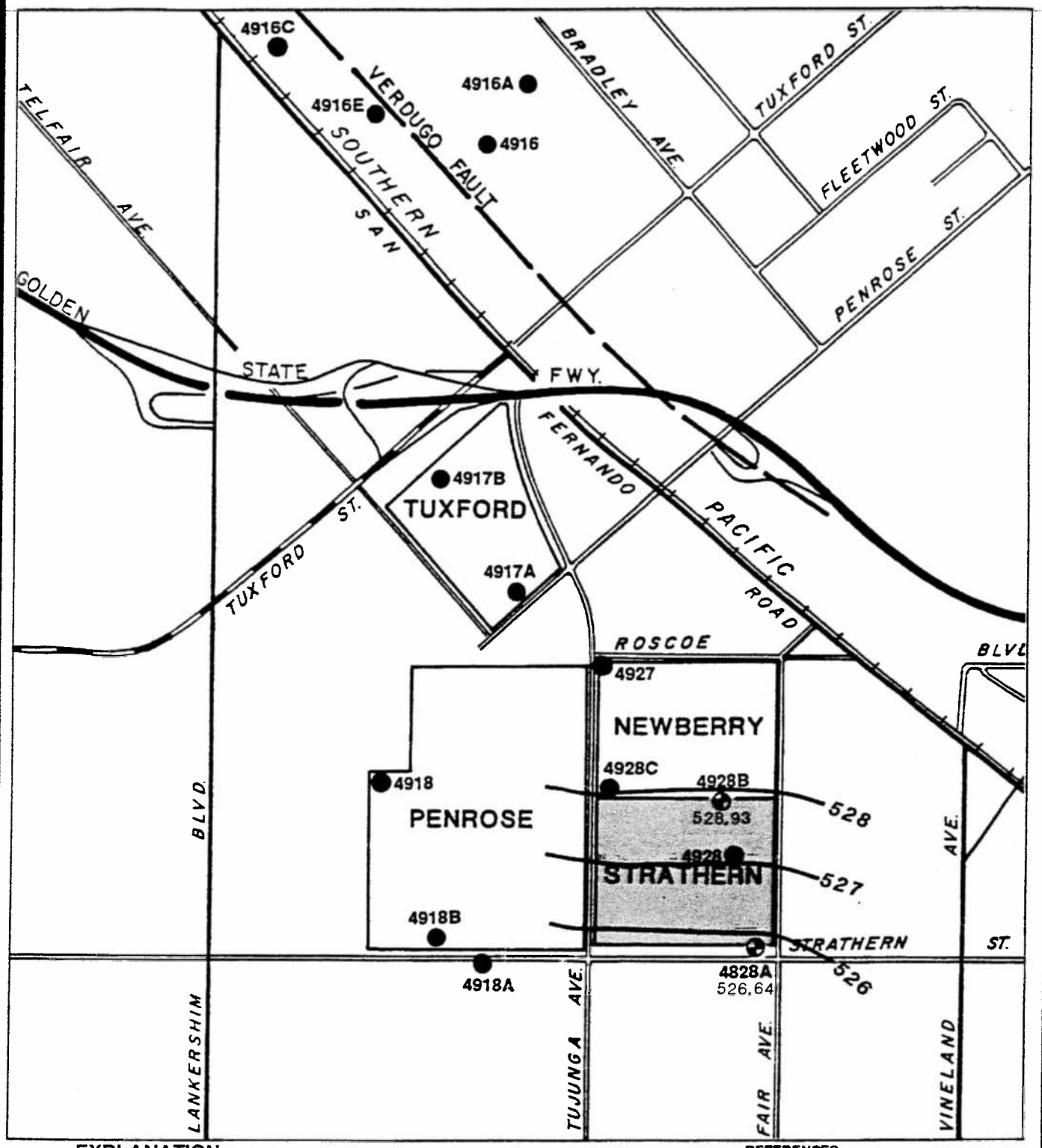


JOB 2702.20346.0001 DATE 10/21/94 F.T. ____ DR. MN O.E. ____ CHKD ____

EXPLANATION:

- 4928 ⊕ MONITORING WELL LOCATION AND NUMBER
- 4828B ● OTHER NEARBY MONITORING WELL
- 528.93 GROUND WATER SURFACE ELEVATION IN FEET ASL.
- 528 —— LINES OF EQUAL GROUND WATER ELEVATION

N

0 1000 2000

SCALE IN FEET

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

AUGUST 1994

GROUND WATER CONTOUR MAP

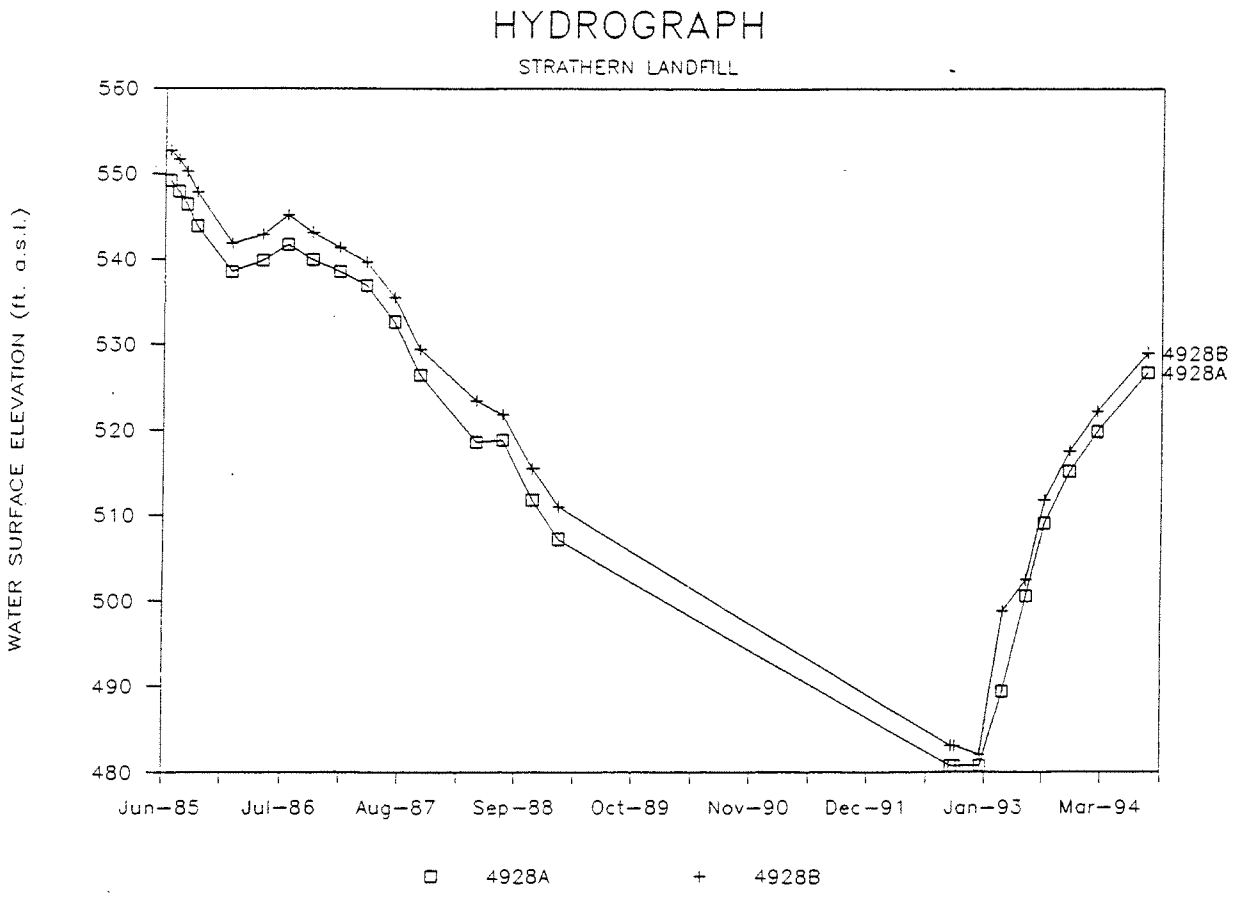
LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2

004154

JOB 2702.20346.0001 DATE 10/20/94 F.T. _____ DR. _____ O.E. WJO CHKD _____



LAW/CRANDALL, INC.

FIGURE 3

Appendix A contains the groundwater sampling protocol. The groundwater database in Appendix B contains a summary of field and laboratory analyses. Appendix C contains the analytical results from BC Analytical Laboratories of groundwater samples collected in the third quarter of 1994. Appendix C also contains the chain-of-custody records.

CONCLUSIONS

Water levels continued to rise due to precipitation during the winter months and recharge activities. Based on laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall, Inc., will continue to monitor the site quarterly. There are no recommendations based on the third quarter 1994 data.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis
Project Geologist

Alice M. Campbell, C.E.G. 1157
Principal Geologist
Chief Scientist

WJO:ks
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Attachments

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CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 31ST day of OCT., 1994, at Los Angeles, California.

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
Vice President

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain-of-Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record. All packages sent to the laboratory shall be accompanied by the chain-of-custody record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX B

GROUNDWATER DATABASE

JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJO CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)			FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES										GENERAL MINERAL(ppm)					
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
WELL 4928A	31-Dec-84	803.78							560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
WELL 4928A	19-Jun-85	803.78	549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
WELL 4928A	17-Jul-85	803.78	547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
WELL 4928A	14-Aug-85	803.78	546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.44	0.8	0.25	790	<0.05	120.0	
WELL 4928A	19-Sep-85	803.78	543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
WELL 4928A	16-Jan-86	803.78	538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
WELL 4928A	29-Apr-86	803.78	539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
WELL 4928A	22-Jul-86	803.78	541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
WELL 4928A	15-Oct-86	803.78	539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
WELL 4928A	14-Jan-87	803.78	538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
WELL 4928A	15-Apr-87	803.78	536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6	650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
WELL 4928A	24-Jul-87	803.10	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6	630	58	140	13.0			840	<0.05	20.0	
WELL 4928A	21-Oct-87	803.10	526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6	590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
WELL 4928A	29-Apr-88	803.10	518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6	480	61	50	23.0	0.3	0.34	600	11.0		0.12
WELL 4928A	28-Jul-88	803.10	518.82	7.4	67.1	450	37.0	385	900	7.4	99	24	51	5.6	<0.6	442	51	36	19.0	0.34	0.30	550	10.0		<0.08
WELL 4928A	08-Nov-88	803.10	511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6	370	56	23	12.0	0.22	0.20	450	<3		<0.08
WELL 4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6	350	51	21	16.0	0.05	0.30	440	<5		0.18
WELL 4928A	06-Oct-92	803.78	480.78																						
WELL 4928A	19-Oct-92	803.78	480.78																						
WELL 4928A	15-Jan-93	803.78	480.78																						
WELL 4928A	02-Apr-93	803.78	489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
WELL 4928A	22-Jun-93	803.78	500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
WELL 4928A	24-Aug-93	803.78	509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
WELL 4928A	19-Nov-93	803.78	515.15	7.4	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64	350	<6		
WELL 4928A	21-Feb-94	803.78	519.78	7.2	66	650	50	348	830	7.1	100	24	45	5.9	<0.6	430	52	34	1.4	0.30	0.26	530			
WELL 4928A	05-Aug-94	803.78	526.64	7.0	66	700	55	356	820	7.0	91	23	39	5.4	<1	330	46	46	21.0	0.26	0.48	490			

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JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJO W.P. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)					TRACE ELEMENTS (ppm)											
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
WELL 4928A	31-Dec-84	44	5.3								<0.09	0.220		<0.04				<0.015	B&C
WELL 4928A	19-Jun-85	<1	1	3							<0.086	<0.09		0.290				0.670	B&C
WELL 4928A	17-Jul-85	<1	1	2							<0.09	0.060		0.240				0.600	B&C
WELL 4928A	14-Aug-85										<0.08	<0.046		0.230				0.600	B&C
WELL 4928A	19-Sep-85	37	2	2							<0.035	<0.042		0.260				0.800	B&C
WELL 4928A	16-Jan-86	<1	1	2							<0.033	<0.063		0.390				0.650	B&C
WELL 4928A	29-Apr-86	<1	<1	<1							<0.02	<0.2		0.320				0.700	B&C
WELL 4928A	22-Jul-86	<1	2	<1							<0.02	<0.2		0.400				0.490	B&C
WELL 4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
WELL 4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
WELL 4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
WELL 4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
WELL 4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
WELL 4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
WELL 4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
WELL 4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
WELL 4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
WELL 4928A	06-Oct-92																		
WELL 4928A	19-Oct-92																		
WELL 4928A	15-Jan-93																		
WELL 4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001	<0.02	0.20	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
WELL 4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
WELL 4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
WELL 4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001	<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
WELL 4928A	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1			<0.001	<0.02	0.76		0.030	0.004	<0.04		0.48	B&C
WELL 4928A	05-Aug-94	<0.5	1.60	<0.5	<0.5	<0.5	<0.05			<0.003	<0.03	0.42		<0.02	0.005	<0.005		0.48	B&C

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004154

JOB 2702.20346.0001 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJD CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES									GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	fpH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 49288	23-Oct-84	823.10							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
WELL 49288	19-Jun-85	823.10	552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
WELL 49288	17-Jul-85	823.10	551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	8.2	0.0	450	68	40	20.0			520	0.06	6.1	
WELL 49288	14-Aug-85	823.10	550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
WELL 49288	19-Sep-85	823.10	547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	81	33	36.0			510	<0.05	<3	
WELL 49288	16-Jan-88	823.10	541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
WELL 49288	29-Apr-86	823.10	542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
WELL 49288	22-Jul-86	823.10	545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.0	290	29	22	6.9			420	0.12	6.0	
WELL 49288	15-Oct-86	823.10	543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
WELL 49288	14-Jan-87	823.10	541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
WELL 49288	15-Apr-87	823.10	539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6	340	54	18	6.6	0.4	0.40	410	0.08	11.0	
WELL 49288	24-Jul-87	823.10	535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6	350	50	24	6.8			430	<0.05	<3	
WELL 49288	21-Oct-87	823.10	529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6	370	50	21	6.4	0.25	0.40	430	<0.05	<3	
WELL 49288	29-Apr-88	823.17	523.37	8.6	66.2	455	25.0	260	710	7.8	82	31	31	4.2	<0.6	356	52	20	2.9	0.18	0.40	400	7.0		<0.08
WELL 49288	28-Jul-88	823.17	521.77	7.4	68.0	335	25.0	336	680	7.5	85	20	30	3.9	<0.6	350	48	18	2.4	0.19	0.40	410	6.0		<0.08
WELL 49288	08-Nov-88	823.17	515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6	380	53	18	3.2	0.16	0.30	430	<3		<0.08
WELL 49288	07-Feb-89	823.17	511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6	350	56	17	3.9	<0.02	0.40	400	<5		0.24
WELL 49288	06-Oct-92	823.09	483.09																						
WELL 49288	19-Oct-92	823.09	483.09																						
WELL 49288	15-Jan-93	823.09	482.09																						
WELL 49288	02-Apr-93	823.09	498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
WELL 49288	22-Jun-93	823.09	502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
WELL 49288	24-Aug-93	823.09	511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
WELL 49288	19-Nov-93	823.09	517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		
WELL 49288	21-Feb-94	823.09	522.09	7.3	69	525	65	332	730	7.1	100	27	38	6.0	<0.6	430	46	22	<0.2	0.25	0.25	440			
WELL 49288	05-Aug-94	823.09	528.93	7	68	950	NA	528	1000	6.8	130	35	39	6.0	<1	500	48	35	0.31	0.27	0.41	600			

LAW/CRANDALL, INC.

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JOB 2702.20346.0601 DATE 10/19/94 F.T. _____ DR. _____ O.E. WJO CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		ORGANICS (ppb)						TRACE ELEMENTS (ppm)										
POINT	DATE	TCE	PCE	1,2DCA	1,1DCE	CCl4	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928B	23-Oct-84		4								<0.06	<0.08		2.200				0.082	B&C
WELL 4928B	19-Jun-85	<1	<1	<1							<0.086	<0.09		2.270				0.077	B&C
WELL 4928B	17-Jul-85	<1	<1	3							<0.09	<0.06		2.400				0.081	B&C
WELL 4928B	14-Aug-85										<0.08	<0.046		2.500				0.050	B&C
WELL 4928B	19-Sep-85	<1	3	<1							<0.035	<0.042		2.400				0.067	B&C
WELL 4928B	16-Jan-86	<1	<1	<1							<0.033	<0.063		1.700				0.051	B&C
WELL 4928B	29-Apr-86	<1	1	<1							<0.02	<0.2		1.300				0.070	B&C
WELL 4928B	22-Jul-86	<1	3	<1							<0.02	<0.2		1.100				0.050	B&C
WELL 4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
WELL 4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
WELL 4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
WELL 4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02	<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.68	B&C
WELL 4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
WELL 4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
WELL 4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
WELL 4928B	06-Oct-92																		
WELL 4928B	19-Oct-92																		
WELL 4928B	15-Jan-93																		
WELL 4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005	<0.02	0.82	<0.0002	0.06	0.049	<0.04	<0.004	3.5	B&C
WELL 4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001	<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
WELL 4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001	<0.02	17	<0.0002	0.40	0.018	<0.04	<0.004	4.8	B&C
WELL 4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.10			<0.001	<0.02	82		3.80	0.003	<0.04		3.0	B&C
WELL 4928B	21-Feb-94	<0.5	<0.5	<0.5	<0.5	<0.5	2.50			<0.001	<0.02	87		2.70	0.013	<0.04		4.0	B&C
WELL 4928B	05-Aug-94	1.1	2.7	<0.5	0.72	<0.5	<0.05			<0.003	<0.03	7.9		1.30	0.017	<0.005		1.2	B&C

LAW/CRANDALL, INC.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G94-08-065

Received: 05 AUG 94

Mailed: AUG 25 1994

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Digestion (3010), Date	08/16/94	08/16/94
Furnace Digestion (3020), Date	08/11/94	08/11/94
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	330	500
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	330	500
Calcium (6010/200.7), mg/L	91	130
Magnesium (6010/200.7), mg/L	23	35
Chloride, mg/L	46	35
Copper (6010/200.7), mg/L	<0.03	<0.03
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010/200.7), mg/L	0.42	7.9
Manganese (6010/200.7), mg/L	<0.02	1.3
pH (150.1/9040), Units	7.0	6.8
Potassium (6010/200.7), mg/L	5.4	6.0
Sodium (6010/200.7), mg/L	39	39
Sulfate, mg/L	46	48
Conductivity (120.1), umhos/cm	820	1000
Dissolved Solids (160.1), mg/L	490	600
Zinc (6010/200.7), mg/L	0.48	1.2
Ion Balance, Percent	5.7	3.4

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-065

Received: 05 AUG 94

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Nitrate+Nitrite		
Nitrate+Nitrite (as NO3), mg/L	21	0.31
Nitrate+Nitrite (as N), mg/L	4.75	0.070
Aluminum (6010/200.7), mg/L	<0.05	<0.05
Fluoride, mg/L	0.48	0.41
Boron (6010/200.7), mg/L	0.26	0.27
Cadmium (7131/213.2), mg/L	<0.003	<0.003
Chromium (6010/200.7), mg/L	<0.006	<0.006
Lead (7421/239.2), mg/L	0.0053	0.017
Nickel (6010/200.7), mg/L	<0.005	<0.005
EPA 8020		
Date Analyzed	08/17/94	08/17/94
Date Confirmed	08/17/94	08/17/94
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	1.2
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-065

Received: 05 AUG 94

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Halocarbons/EPA 8010		
Date Analyzed	08/17/94	08/17/94
Date Confirmed	08/17/94	08/17/94
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	1.2
1,1-Dichloroethene, ug/L	<0.5	0.72
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	0.56
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-065

Received: 05 AUG 94

Mr.Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-065-1	4928A	05 AUG 94
08-065-2	4928B	05 AUG 94

PARAMETER	08-065-1	08-065-2
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	1.1
Trichlorofluoromethane, ug/L	<0.5	1.1
Tetrachloroethene, ug/L	1.6	2.7
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

James C. Hein, Laboratory Director

BCA

CHAIN OF CUSTODY RECORD

BCA Log Number G94-08-065

Client name: LAW / CRANDALL	Project or PO#: 2702.20346.1
Address: 200 CITADEL Dr.	Phone #: (213) 889-5300
City, State, Zip: LA Ca 90040	Report attention: RA SCRIGGINS

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: Randy A. Scriggins / Sample description	Number of containers	Gen. Min. B	601/602	Metals	Hazardous sample / Special handling required	Remarks
	8.5	0930	GW	4928A	5	1	1	1		L.A. BY-PROD
	1	1015	1	4928B	5	1	1	1		Send Bill To:
										LA By-Products
										1810 E 25th ST.
										LA Ca 90058
										ATTN: mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scriggins	Randy A. Scriggins	Law/Crandall	8.5.94	10:40
Received by	Susan Arrowsmith	S. ARROWSMITH	BC Analytical	8.5.94	10:40
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- 1015 Shary Circle, Concord, CA 94518 (510) 825-3864
- 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil PE—Petroleum

0041172

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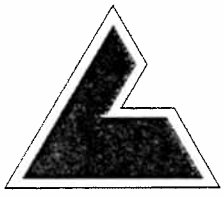
GROUND WATER MONITORING REPORT
FIRST QUARTER 1993

STRATHERN LANDFILL
SUN VALLEY DISTRICT
LOS ANGELES, CALIFORNIA

Prepared for
Los Angeles By-Products Company
April 30, 1993
Law/Crandall Project No. 2702.20346.0001



LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ONE OF THE LAW COMPANIES

004173

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

April 30, 1993

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Project No. 2702.20346.0001
RWQCB CI No. 7055

Attention: Mr. Mike McAllister

GROUND WATER MONITORING REPORT
FIRST QUARTER 1993
Strathern Landfill
Sun Valley District
Los Angeles, California

INTRODUCTORY SUMMARY

This report contains a summary of First Quarter 1993 ground water monitoring for Los Angeles By-Product Company's Strathern Landfill. The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Law/Crandall, Inc., monitors the ground water levels and ground water quality at Strathern Landfill.

On October 6, 1992, Law/Crandall, Inc., attempted to measure ground water levels and collect ground water samples. However, water levels had fallen below the pumps, so samples and measurements could not be obtained. The water levels have declined since the Toluca-Rinaldi well field has been in operation, and because of drought conditions over the past six years. The pumps were lowered on October 27, 1992. Ground water elevations were measured in the monitoring wells, but water levels were still too low to allow pumps to hold suction and bring water to the surface.

200 CITADEL DRIVE
LOS ANGELES, CA 90040-1554

213-889-5300
FAX 213-721-6700
ONE OF THE LAW COMPANIES

After the heavy winter rains, ground water measurements by Los Angeles By-Products and Law/Crandall personnel showed that water levels have risen. Law/Crandall, Inc., collected ground water samples on April 2, 1993 and prepared this report.

SCOPE AND LIMITATIONS

Law/Crandall, Inc., measures ground water levels, collects ground water samples, analyzes the laboratory results and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region under the provisions of the Waste Discharge Requirement (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) No. 7055.

The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data including a description of the site, the monitoring requirements, and the ground water monitoring well network.

Site Description

Los Angeles By-Products Company operates the Strathern Landfill located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks,

aggregates, and broken asphalt. The site covers 34.7 acres and has a capacity of approximately 6,900,000 cubic yards. Strathern Landfill is located adjacent to Tuxford, Penrose and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The site is monitored to satisfy the requirements of Monitoring and Reporting Program (MRP) No. 7055 adopted by the RWQCB on July 22, 1991. The MRP requires quarterly reporting on ground water quality. This initial monitoring report covers this requirement for the first quarter of 1993.

Monitoring consists of measuring ground water levels and collecting ground water samples. Appendix A contains the ground water sampling protocol. Law/Crandall, Inc., collected ground water samples on April 2, 1993, and prepared this report. BC Analytical Laboratories performed the chemical analyses. BC Analytical is certified for such analyses by the State Department of Health Services.

The Solid Waste Water Quality Assessment Test (SWAT) Report was submitted to the RWQCB on July 1, 1989.

Monitoring Well Network

The ground water monitoring well network for the site consists of two wells. Figure 1 shows the monitoring well locations. Table 1 presents monitoring well construction details.

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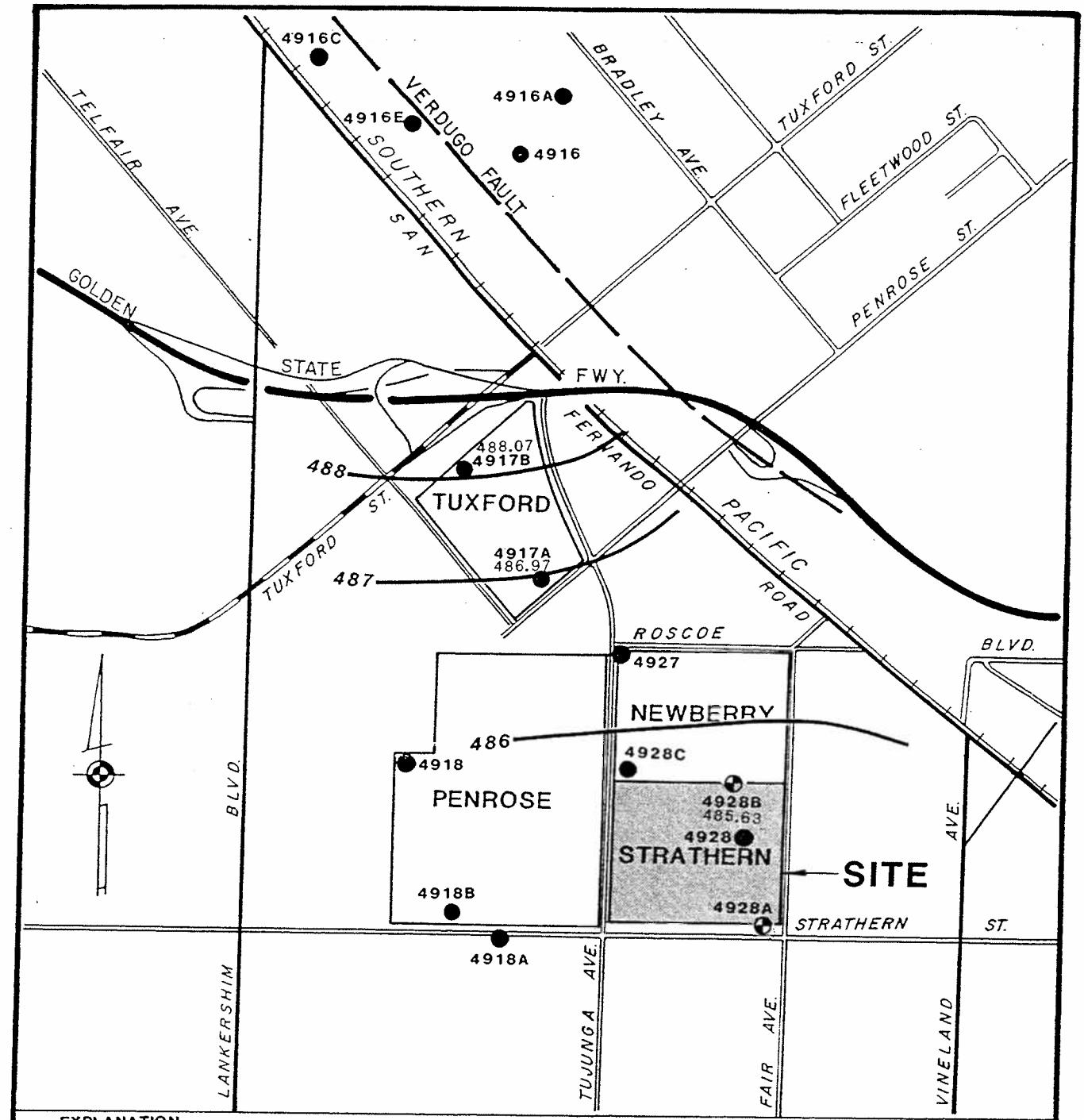


EXPLANATION

- 4928B ◔ MONITORING WELL LOCATION AND NUMBER
- 4928C ● OTHER NEARBY MONITORING WELL
- 488.07 GROUND WATER SURFACE ELEVATION IN FEET ASL.
- —488— LINES OF EQUAL GROUND WATER ELEVATION

REFERENCE:
BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000
SCALE IN FEET

FEBRUARY 1993

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

004177

TABLE 1

MONITORING WELL CONSTRUCTION DETAILS

WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

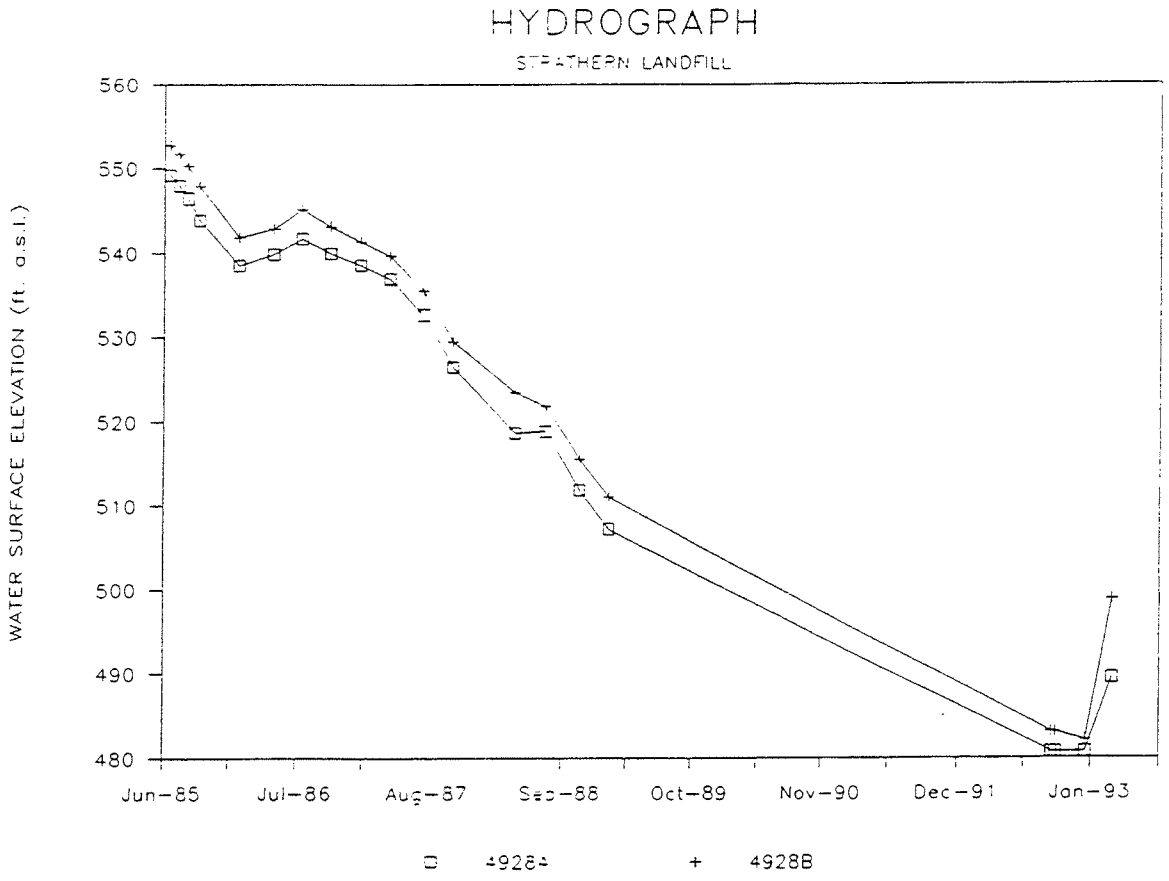
This section presents the first quarter 1993 monitoring results, including ground water levels and ground water quality.

Ground Water Levels

Law/Crandall measured ground water levels during the first quarter of 1993. In response to the heavy winter rains, ground water levels rose in March. The ground water database in Appendix B contains the water level data. Figure 1 shows the ground water levels and contours for the first quarter of 1993. Figure 2 shows the hydrograph for the two wells.

Ground Water Quality

We collected ground water samples on April 2, 1993. Laboratory analyses indicate that the ground water meets California Drinking Water Standards for the parameters measured, except for iron and manganese in well 4928B. Trace amounts of trichloroethylene (TCE) were detected in well 4928B and tetrachloroethylene (PCE) was detected in well 4928A. Table 2 compares ground water quality for the first quarter of 1993 with California Drinking Water Standards.



LAW/CRANDALL, INC.

FIGURE 2

TABLE 2

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
First Quarter 1993

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE	
		4928A	4928B
Inorganic	(ppm)		
Total Dissolved Solids (TDS)	500	330	190
Chloride (Cl)	250	18	19
Sulfate (SO_4)	250	35	24
Nitrate (NO_3)	45	8.0	<0.2
Iron (Fe)	0.3	0.20	0.82
Manganese (Mn)	0.05	<0.01	0.064
Zinc (Zn)	5	0.37	3.5
Organic	(ppb)		
Trichloroethylene (TCE)	5	<0.5	0.90
Tetrachloroethylene (PCE)	5	1.6	<0.5
1,2-dichloroethane (1,2-DCA)	0.5	<0.5	<0.5
1,1-dichloroethene (1,1-DCE)	6	<0.5	<0.5
Carbon tetrachloride (CCl_4)	0.5	<0.5	<0.5

* Source: CCR, Title 22, Division 4, Chapter 15

Appendix A contains the ground water sampling protocol. The ground water database in Appendix B contains a summary of field and laboratory analyses. Appendix C contains the analytical results from BC Analytical Laboratories of ground water samples collected in the first quarter of 1993. Appendix C also contains the chain-of-custody records.

CONCLUSIONS

Water levels rose due to the heavy winter rains. Based on the laboratory data, waste disposal activities do not appear to be adversely affecting local ground water quality. Law/Crandall, Inc., will continue to monitor the site quarterly. No recommendations are warranted based on the first quarter 1993 data.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis
Staff Geologist

Alice Campbell, C.E.G. 1157
Principal Hydrogeologist

WJO:ks
D:\HYDRO\REPORTS\93-GWM\20346-Q1.RPT
Attachments

APPENDIX A

GROUND WATER SAMPLING PROTOCOL

SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting ground water samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

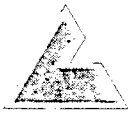
Ground water samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.



Sample Identification and Chain of Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. All packages sent to the laboratory shall be accompanied by the Chain of Custody Record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

APPENDIX B

GROUND WATER DATABASE

JOB _____ DATE 4/27/93 F.T. _____ DR. _____ O.E. WJO W.P. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

		WATER LEV (ft.)			FIELD MEASUREMENTS (ppm)				LABORATORY ANALYSES								GENERAL MINERAL(ppm)									
POINT	DATE	REF PT.	W S E		pH	T(f)	fEC	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOX
WELL 4928A	03-May-84	803.78									7.2	120	28	48.0	6.0	0.0	363	75	65.0	15.0		0.35	650			
WELL 4928A	31-Dec-84	803.78								560	7.7	73	16	26.0	4.2	0.0	280	58	6.5	12.0			351			
WELL 4928A	19-Jun-85	803.78	549.22		7.1	69	1100	89.0	506	1300	7.0	130	36	90.0	9.0	0.0	490	46	87.0	16.0			750	<0.05	8.0	
WELL 4928A	17-Jul-85	803.78	547.95		6.8	68	1180	102.0	480	1300	6.9	120	34	93.0	8.6	0.0	620	59	98.0	8.9			730	0.06	7.5	
WELL 4928A	14-Aug-85	803.78	546.41		6.8	74	1250	22.5		1400	7.6	230	33	79.0	11.0	0.0	610	44	110.0	<0.	0.8	0.25	790	<0.05	120.0	
WELL 4928A	19-Sep-85	803.78	543.93		6.3	68	1250	40.5	555	1500	6.8	250	35	78.0	6.0	0.0	670	55	81.0	25.0			830	<0.05	14.0	
WELL 4928A	16-Jan-86	803.78	538.51		7.0	66	1400		180	1400	7.0	160	40	91.0	8.6	0.0	620	26	150.0	5.4			880	<0.05	20.0	
WELL 4928A	29-Apr-86	803.78	539.84		6.6	68	900	68.0	350	1100	7.8	170	27	63.0	7.6	0.0	488	27	75.0	<4			580		29.0	
WELL 4928A	22-Jul-86	803.78	541.67		7.3	69	1200	66.0	460	1300	7.1	170	36	80.0	8.0	0.0	390	37	260.0	8.6			780	0.11	5.0	
WELL 4928A	15-Oct-86	803.78	539.90		5.9	67	1200	26.0	470	1400	7.4	160	41	84.0	3.8	0.0	490	55	130.0	12.0	0.6	0.30	810	<0.05	3.0	
WELL 4928A	14-Jan-87	803.78	538.50		6.9	66	340	75.0	460	1400	7.0	160	38	82.0	7.6	0.0	590	54	120.0	12.0	0.8	0.30	820	<0.05	10.0	
WELL 4928A	15-Apr-87	803.78	536.86		5.8	69	1100	42.5	490	1500	6.8	170	44	85.0	6.6	<0.6	650	62	130.0	16.4	0.8	0.30	910	<0.05	18.0	
WELL 4928A	24-Jul-87	803.78	532.61		7.2	70	1200	35.0	515	1400	7.0	170	47	110.0	8.4	<0.6	630	58	140.0	13.0			840	<0.05	20.0	
WELL 4928A	21-Oct-87	803.78	526.40		6.9	66	760	34.5	436	1300	7.7	140	34	82.0	8.5	<0.6	590	56	83.0	19.0	0.63	0.30	760	<0.05	17.0	
WELL 4928A	29-Apr-88	803.10	518.58		8.0	66	950	32.0	203	1000	7.3	110	63	63.0	6.4	<0.6	480	61	50.0	23.0	0.3	0.34	600	11.0		0.12
WELL 4928A	28-Jul-88	803.10	518.82		7.4	67.1	450	37.0	385	900	7.4	99	24	51.0	5.6	<0.6	442	51	36.0	19.0	0.34	0.30	550	10.0		<0.08
WELL 4928A	08-Nov-88	803.10	511.81		7.2	65	700	32.0	350	760	7.2	91	26	49.0	5.6	<0.6	370	56	23.0	12.0	0.22	0.20	450	<3		<0.08
WELL 4928A	07-Feb-89	803.10	507.20		7.0	66	700	35.0	360	720	7.2	92	21	35.0	4.5	<0.6	350	51	21.0	16.0	0.05	0.30	440	<5		0.18
WELL 4928A	06-Oct-92	803.78	480.78																							
WELL 4928A	19-Oct-92		480.78																							
WELL 4928A	15-Jan-93		480.78																							
WELL 4928A	02-Apr-93		489.42		7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
WELL 49288	23-Oct-84	823.10								1000	7.1	110	20	100.0	5.4	0.0	470	60	40.0	19.0			620			
WELL 49288	19-Jun-85	823.10	552.73		8.4	70	900	66.0	392	870	7.1	82	24	92.0	6.3	0.0	450	53	38.0	39.0			560	<0.05	4.0	
WELL 49288	17-Jul-85	823.10	551.71		6.8	74	800	60.0	310	900	6.9	82	24	84.0	6.2	0.0	450	68	40.0	20.0			520	0.06	6.1	
WELL 49288	14-Aug-85	823.10	550.29		7.2	72	850	13.0		860	7.8	120	20	65.0	7.2	0.0	390	56	37.0	12.0	0.4	0.32	530	<0.05	<3	
WELL 49288	19-Sep-85	823.10	547.87		6.5	70	740	30.5	350	820	6.9	130	23	49.0	3.3	0.0	380	61	33.0	36.0			510	<0.05	<3	
WELL 49288	16-Jan-86	823.10	541.82		7.2	68	750		321	750	7.2	107	22	36.0	4.4	0.0	340	28	25.0	26.0			460	<0.05	<3	
WELL 49288	29-Apr-86	823.10	542.86		6.7	71	520	18.0	255	600	8.0	120	17	30.0	5.2	0.0	341	30	20.0	7.0			320		<3	
WELL 49288	22-Jul-86	823.10	545.14		7.3	70	620	30.0	270	700	7.4	110	20	37.0	4.4	0.0	290	29	22.0	6.9			420	0.12	6.0	
WELL 49288	15-Oct-86	823.10	543.10		6.0	68	690	33.5	255	680	7.6	87	10	29.0	4.2	0.0	280	60	35.0	15.0	0.3	0.30	440	<0.05	<3	
WELL 49288	14-Jan-87	823.10	541.32		6.7	66	500	16.5	240	700	7.3	88	21	35.0	4.2	0.0	340	51	18.0	5.3	0.5	0.40	420	0.10	<3	
WELL 49288	15-Apr-87	823.10	539.63		6.2	65	450	25.0	250	680	7.0	80	22	33.0	4.0	<0.6	340	54	18.0	6.6	0.4	0.40	410	0.08	11.0	
WELL 49288	24-Jul-87	823.10	535.48		6.8	70	550	8.0	290	720	7.4	87	25	36.0	4.3	<0.6	350	50	24.0	6.8			430	<0.05	<3	
WELL 49288	21-Oct-87	823.10	529.40		6.9	66	465	65.0	291	740	7.9	90	22	35.0	5.0	<0.6	370	50	21.0	8.4	0.25	0.40	430	<0.05	<3	
WELL 49288	29-Apr-88	823.17	523.37		8.6	66.2	455	25.0	260	710	7.8	82	31	31.0	4.2	<0.6	356	52	20.0	2.9	0.18	0.40	400	7.0		<0.08
WELL 49288	28-Jul-88	823.17	521.77		7.4	68.0	335	25.0	336	680	7.5	85	20	30.0	3.9	<0.6	350	48	18.0	2.4	0.19	0.40	410	6.0		<0.08
WELL 49288	08-Nov-88	823.17	515.47		7.3	66	680	20.0	400	740	7.2	83	25	51.0	4.7	<0.6	380	53	18.0	3.2	0.16	0.30	430	<3		<0.08
WELL 49288	07-Feb-89	823.17	511.00		6.6	66	670	23.0	372	680	7.3	85	24	36.0	4.6	<0.6	350	56	17.0	3.9	<0.02	0.40	400	<5		0.24
WELL 49288	06-Oct-92	823.09	483.09																							
WELL 49288	19-Oct-92		483.09																							
WELL 49288	15-Jan-93		482.09																							
WELL 49288	02-Apr-93		498.82		7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		

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JOB _____ DATE 4/27/93 F.T. _____ DR. _____ O.E. WJD W.P. _____ CHKD _____

STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

POINT	DATE	ORGANICS (ppb) TCE	PCE	1,2DCA	1,1DCE	CCl4	TRACE ELEMENTS (ppm) Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
WELL 4928A	31-Dec-84	44	5.3								<0.09	0.220		<0.04				<0.015	B&C
WELL 4928A	19-Jun-85	<1	1	3							<0.086	<0.09		0.290				0.670	B&C
WELL 4928A	17-Jul-85	<1	1	2							<0.09	0.060		0.240				0.600	B&C
WELL 4928A	14-Aug-85										<0.08	<0.046		0.230				0.600	B&C
WELL 4928A	19-Sep-85	37	2	2							<0.035	<0.042		0.260				0.800	B&C
WELL 4928A	16-Jan-86	<1	1	2							<0.033	<0.063		0.390				0.650	B&C
WELL 4928A	29-Apr-86	<1	<1	<1							<0.02	<0.2		0.320				0.700	B&C
WELL 4928A	22-Jul-86	<1	2	<1							<0.02	<0.2		0.400				0.490	B&C
WELL 4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
WELL 4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
WELL 4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
WELL 4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
WELL 4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
WELL 4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
WELL 4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
WELL 4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
WELL 4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
WELL 4928A	06-Oct-92																		
WELL 4928A	19-Oct-92																		
WELL 4928A	15-Jan-93																		
WELL 4928A	02-Apr-93	<0.5	1.60	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001	<0.02	0.20	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
WELL 4928B	23-Oct-84		4								<0.06	<0.08		2.200				0.082	B&C
WELL 4928B	19-Jun-85	<1	<1	<1							<0.086	<0.09		2.270				0.077	B&C
WELL 4928B	17-Jul-85	<1	<1	3							<0.09	<0.06		2.400				0.081	B&C
WELL 4928B	14-Aug-85										<0.08	<0.046		2.500				0.050	B&C
WELL 4928B	19-Sep-85	<1	3	<1							<0.035	<0.042		2.400				0.067	B&C
WELL 4928B	16-Jan-86	<1	<1	<1							<0.033	<0.063		1.700				0.051	B&C
WELL 4928B	29-Apr-86	<1	1	<1							<0.02	<0.2		1.300				0.070	B&C
WELL 4928B	22-Jul-86	<1	3	<1							<0.02	<0.2		1.100				0.050	B&C
WELL 4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
WELL 4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
WELL 4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.030	B&C
WELL 4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.040	B&C
WELL 4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.030	B&C
WELL 4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02	<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.680	B&C
WELL 4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.170	B&C
WELL 4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.080	B&C
WELL 4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.360	B&C
WELL 4928B	06-Oct-92																		
WELL 4928B	19-Oct-92																		
WELL 4928B	15-Jan-93																		
WELL 4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005	<0.02	0.82	<0.0002	0.06	0.049	<0.04	<0.004	3.50	B&C

LAW/CRANDALL, INC.

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APPENDIX C

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G93-04-025

Received: 02 APR 93

Mailed: 4-20-93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	190	260
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	190	260
Calcium (6010), mg/L	26	72
Magnesium (6010), mg/L	19	17
Chloride (325.3), mg/L	19	18
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.82	0.20
Manganese (6010), mg/L	0.064	<0.01
pH (150.1/9040), Units	8.1	7.6
Potassium (6010), mg/L	4.7	4.6
Sodium (6010), mg/L	34	29
Sulfate (375.4), mg/L	24	35
Conductivity (120.1), umhos/cm	410	590
Filterable Residue, TDS (160.1), mg/L	190	330
Zinc (6010), mg/L	3.5	0.37
Ion Balance, Percent	3.86	1.45

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04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Nitrate (353.2)		
Nitrate (as N), mg/L	<0.05	1.8
Nitrate (as NO3), mg/L	<0.2	8.0
Digestion (3005), Date	04/05/93	04/05/93
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (340.2), mg/L	0.28	0.43
Furnace Digestion (3020), Date	04/07/93	04/07/93
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.087	0.069
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	0.005	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.049	0.0048
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
Cyanide (9010), mg/L	<0.02	<0.02
COD (410.4), mg/L	<6	<6
Phenolics (9065), mg/L	<0.05	<0.05

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04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
B/N,A Ext.Pri.Poll. (EPA 8270)		
Date Analyzed	04/08/93	04/08/93
Date Extracted	04/06/93	04/06/93
Dilution Factor, Times	1	1
1,2,4-Trichlorobenzene, ug/L	<5	<5
1,2-Dichlorobenzene, ug/L	<6	<6
1,2-Diphenylhydrazine, ug/L	<5	<5
1,3-Dichlorobenzene, ug/L	<5	<5
1,4-Dichlorobenzene, ug/L	<5	<5
2,4,5-Trichlorophenol, ug/L	<6	<6
2,4,6-Trichlorophenol, ug/L	<5	<5
2,4-Dichlorophenol, ug/L	<5	<5
2,4-Dimethylphenol, ug/L	<5	<5
2,4-Dinitrophenol, ug/L	<5	<5
2,4-Dinitrotoluene, ug/L	<5	<5
2,6-Dinitrotoluene, ug/L	<5	<5
2-Chloronaphthalene, ug/L	<6	<6
2-Chlorophenol, ug/L	<5	<5
2-Methyl-4,6-dinitrophenol, ug/L	<5	<5
2-Methylnaphthalene, ug/L	<5	<5
2-Methylphenol (o-Cresol), ug/L	<5	<5
2-Nitroaniline, ug/L	<5	<5
2-Nitrophenol, ug/L	<5	<5
3,3'-Dichlorobenzidine, ug/L	<20	<20
3-Nitroaniline, ug/L	<5	<5
4-Bromophenylphenylether, ug/L	<5	<5
4-Chloro-3-methylphenol, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
4-Chloroaniline, ug/L	<5	<5
4-Chlorophenylphenylether, ug/L	<5	<5
4-Methylphenol (p-Cresol), ug/L	<8	<8
4-Nitroaniline, ug/L	<6	<6
4-Nitrophenol, ug/L	<5	<5
Acenaphthene, ug/L	<5	<5
Acenaphthylene, ug/L	<5	<5
Aniline, ug/L	<5	<5
Anthracene, ug/L	<5	<5
Benzidine, ug/L	<200	<200
Benzo(a)anthracene, ug/L	<5	<5
Benzo(a)pyrene, ug/L	<5	<5
Benzo(b)fluoranthene, ug/L	<5	<5
Benzo(g,h,i)perylene, ug/L	<5	<5
Benzo(k)fluoranthene, ug/L	<5	<5
Benzyl Alcohol, ug/L	<5	<5
Benzoic acid, ug/L	<50	<50
Butylbenzylphthalate, ug/L	<5	<5
Chrysene, ug/L	<5	<5
Di-n-octylphthalate, ug/L	<5	<5
Dibenzo(a,h)anthracene, ug/L	<5	<5
Dibenzofuran, ug/L	<5	<5
Dibutylphthalate, ug/L	<5	<5
Diethylphthalate, ug/L	<5	<5
Dimethylphthalate, ug/L	<5	<5
Fluoranthene, ug/L	<5	<5
Fluorene, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Hexachlorobenzene, ug/L	<5	<5
Hexachlorobutadiene, ug/L	<5	<5
Hexachlorocyclopentadiene, ug/L	<5	<5
Hexachloroethane, ug/L	<5	<5
Indeno(1,2,3-c,d)pyrene, ug/L	<7	<7
Isophorone, ug/L	<5	<5
N-Nitrosodimethylamine, ug/L	<6	<6
N-Nitrosodiphenylamine, ug/L	<5	<5
N-Nitrosodi-n-propylamine, ug/L	<6	<6
Nitrobenzene, ug/L	<5	<5
Naphthalene, ug/L	<5	<5
Phenanthrene, ug/L	<5	<5
Phenol, ug/L	<5	<5
Pentachlorophenol, ug/L	<5	<5
Pyrene, ug/L	<5	<5
Bis(2-chloroethoxy)methane, ug/L	<5	<5
Bis(2-chloroethyl)ether, ug/L	<5	<5
Bis(2-chloroisopropyl)ether, ug/L	<6	<6
Bis(2-ethylhexyl)phthalate, ug/L	<7	<7
Dioxin Screen, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Pesticides/PCBs (EPA 8080)		
Date Analyzed	04/06/93	04/06/93
Date Extracted	04/05/93	04/05/93
Dilution Factor, Times	1	1
Aldrin, ug/L	<0.04	<0.04
Chlordane, ug/L	<0.4	<0.4
p,p'-DDD, ug/L	<0.04	<0.04
p,p'-DDE, ug/L	<0.04	<0.04
p,p'-DDT, ug/L	<0.04	<0.04
Dieldrin, ug/L	<0.05	<0.05
Endosulfan I, ug/L	<0.05	<0.05
Endosulfan II, ug/L	<0.05	<0.05
Endosulfan sulfate, ug/L	<0.1	<0.1
Endrin, ug/L	<0.05	<0.05
Endrin aldehyde, ug/L	<0.04	<0.04
Heptachlor epoxide, ug/L	<0.05	<0.05
Heptachlor, ug/L	<0.03	<0.03
Methoxychlor, ug/L	<0.05	<0.05
Aroclor 1016, ug/L	<1	<1
Aroclor 1221, ug/L	<1	<1
Aroclor 1232, ug/L	<1	<1
Aroclor 1242, ug/L	<1	<1
Aroclor 1248, ug/L	<1	<1
Aroclor 1254, ug/L	<1	<1
Aroclor 1260, ug/L	<1	<1
Aroclor 1262, ug/L	<1	<1
Toxaphene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
BHC, alpha isomer, ug/L	<0.03	<0.03
BHC, beta isomer, ug/L	<0.04	<0.04
BHC, delta isomer, ug/L	<0.04	<0.04
BHC, gamma isomer (Lindane), ug/L	<0.04	<0.04

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Halocarbons/EPA 8010		
Date Analyzed	04/15/93	04/15/93
Date Confirmed	04/15/93	04/15/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<3	<3
Freon 113, ug/L	<1	<1
Methylene chloride, ug/L	<0.5	<0.5

BCA

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Trichloroethene, ug/L	0.90	<0.5
Trichlorofluoromethane, ug/L	<0.5	<0.5
Tetrachloroethene, ug/L	<0.5	1.6
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

BCA

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LOG NO: G93-04-025

Received: 02 APR 93

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Vol.Pri.Poll. (EPA 8240)		
Date Analyzed	04/06/93	04/06/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1
Chloromethane, ug/L	<1	<1

BCA

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LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	<1	1.3
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<1	<1
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA 8240)	---	---

BCA

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
04-025-3	Trip Blank #30401	

PARAMETER	04-025-3
Sample Held, Not Analyzed	HOLD

James C. Hein, Laboratory Director

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-1
Sample Description: 4928 B

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	<0.2	<0.0032
Chloride (325.3)	19	0.54
Sulfate (375.4)	24	0.5
Bicarbonate (as HCO3)	230	3.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		4.9

Cations	mg/L	meq/L
Magnesium (6010)	19	1.6
Sodium (6010)	34	1.5
Potassium (6010)	4.7	0.12
Calcium (6010)	26	1.3
Total Millequivalents per Liter		4.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	190
Ca Hardness (as CaCO3)	65
Mg Hardness (as CaCO3)	78
Total Hardness	143
Iron (6010)	0.82
Manganese (6010)	0.064
Copper (6010)	<0.02
Zinc (6010)	3.5
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	190
Sp. Conductance, umhos/cm	410
pH (150.1/9040), units	8.1
Ion balance in percent	3.86

* Conforms to Title 22, California Administrative Code

BCA

004202

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-2
Sample Description: 4928 A

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.0	0.13
Chloride (325.3)	18	0.51
Sulfate (375.4)	35	0.73
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.6

Cations	mg/L	meq/L
Magnesium (6010)	17	1.4
Sodium (6010)	29	1.3
Potassium (6010)	4.6	0.12
Calcium (6010)	72	3.6
Total Millequivalents per Liter		6.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	260
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	70
Total Hardness	250
Iron (6010)	0.20
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.37
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	330
Sp. Conductance, umhos/cm	590
pH (150.1/9040), units	7.6
Ion balance in percent	1.45

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004203

CONFIDENTIAL

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC PRECISION (DUPLICATES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE %DIFF
pH (150.1/9040)	04.02.93	93183	8.1	8.1	Units	0
Conductivity (120.1)	04.03.93	9342	2600	2600	umhos/cm	0
COD (410.4)		93117	<6	<6	mg/L	NA

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Alkalinity (310.1)							
Bicarbonate Alk (as CaCO3)	04.05.93	9315	671	662	190	mg/L	102
Total Alkalinity (as CaCO3)	04.05.93	9315	671	662	190	mg/L	102
Calcium (6010)	04.05.93	93429	75.2	76.0	26	mg/L	98
Magnesium (6010)	04.05.93	93429	66.35	69.0	19	mg/L	95
Chloride (325.3)	04.07.93	9322	38.25	39	19	mg/L	96
Copper (6010)	04.05.93	93429	0.4285	0.500	<0.02	mg/L	86
Surfactants, MBAS (425.1)	04.03.93	9332	1.1	1.00	<0.1	mg/L	110
Iron (EPA 6010)							
Iron (6010)	04.05.93	93429	1.92	2.00	1.7	mg/L	SOR
Iron (6010)	04.05.93	93429	1.1	1.02	0.82	mg/L	SOR
Manganese (EPA 6010)							
Manganese (6010)	04.05.93	93429	0.769	0.810	0.76	mg/L	SOR
Manganese (6010)	04.05.93	93429	0.111	0.104	0.064	mg/L	118
Potassium (6010)	04.05.93	93429	51.9	54.7	4.7	mg/L	94
Sodium (6010)	04.05.93	93429	79.95	84.0	34	mg/L	92
Sulfate (375.4)	04.12.93	9320	1340	1340	840	mg/L	100
Filterable Residue, TDS (160.1)	04.03.93	9324	2405	2490	490	mg/L	96
Zinc (6010)	04.05.93	93429	0.4675	0.500	<0.01	mg/L	94
Zinc (6010)	04.05.93	93429	3.905	4.00	3.5	mg/L	SOR
Nitrate (353.2)							
Nitrate (as N)	04.07.93	93136	4.195	4.30	3.4	mg/L	SOR
Nitrate (as NO3)	04.07.93	93136	18.6	19.0	15	mg/L	SOR
Aluminum (6010)	04.05.93	93429	1.0025	1.00	<0.1	mg/L	100
Aluminum (6010)	04.05.93	93429	0.988	1.00	<0.1	mg/L	99
Fluoride (340.2)	04.12.93	9315	1.3	1.28	0.28	mg/L	102
Cyanide (9010)	04.08.93	9352	0.2055	0.200	<0.02	mg/L	103
COD (410.4)	04.13.93	93117	173	150	<6	mg/L	115
Phenolics (9065)	04.08.93	9323	0.578	0.500	<0.05	mg/L	116
B/N,A Ext.Pri.Poll. (EPA 8270)							
1,2,4-Trichlorobenzene	04.06.93	9362	35.7	50.0	<5	ug/L	71
1,4-Dichlorobenzene	04.06.93	9362	35.05	50.0	<5	ug/L	70
2,4-Dinitrotoluene	04.06.93	9362	41.9	50.0	<5	ug/L	84
2-Chlorophenol	04.06.93	9362	54.85	75.0	<5	ug/L	73
4-Chloro-3-methylphenol	04.06.93	9362	71.9	75.0	<5	ug/L	96
4-Nitrophenol	04.06.93	9362	41.5	75.0	<5	ug/L	55
Acenaphthene	04.06.93	9362	38.15	50.0	<5	ug/L	76

SOR = Spike Out of Range
relative to high sample concentration)

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
N-Nitrosodi-n-propylamine	04.06.93	9362	42.25	50.0	<6	ug/L	85
Phenol	04.06.93	9362	48.65	75.0	<5	ug/L	65
Pentachlorophenol	04.06.93	9362	58.75	75.0	<5	ug/L	78
Pyrene	04.06.93	9362	47.8	50.0	<5	ug/L	96
EPA 8080 Pesticides							
Aldrin	04.06.93	9381	0.4065	0.500	<0.04	ug/L	81
p,p'-DDT	04.06.93	9381	0.4555	0.500	<0.04	ug/L	91
Dieldrin	04.06.93	9381	0.4315	0.500	<0.05	ug/L	86
Endrin	04.06.93	9381	0.4255	0.500	<0.05	ug/L	85
Heptachlor	04.06.93	9381	0.401	0.500	<0.03	ug/L	80
Aroclor 1260	04.06.93	9381	7.07	10.0	<1	ug/L	71
Total PCB's	04.06.93	9381	7.07	10.0	<1	ug/L	71
BHC, gamma isomer (Lindane)	04.06.93	9381	0.4395	0.500	<0.04	ug/L	88
Decachlorobiphenyl Reported	04.06.93	9381	0.4255	0.500	0.422	ug/L	SOR
Tetrachloro-meta-xylene Rpt.	04.06.93	9381	0.351	0.500	0.381	ug/L	SOR
EPA 8240 - Vol. Pri. Poll.							
1,1,1-Trichloroethane	04.07.93	93073	15.4	20.0	<5	ug/L	77
1,1,2,2-Tetrachloroethane	04.07.93	93073	21.05	20.0	<3	ug/L	105
1,1,2-Trichloroethane	04.07.93	93073	20.75	20.0	<3	ug/L	104
1,1-Dichloroethane	04.07.93	93073	17.95	20.0	<5	ug/L	90
1,1-Dichloroethene	04.07.93	93073	14.9	20.0	<3	ug/L	75
1,2-Dichloroethane	04.07.93	93073	23.05	20.0	<3	ug/L	115
1,2-Dichlorobenzene	04.07.93	93073	18.25	20.0	<5	ug/L	91
1,2-Dichloropropane	04.07.93	93073	25.1	20.0	<3	ug/L	126
1,3-Dichlorobenzene	04.07.93	93073	18.55	20.0	<5	ug/L	93
1,4-Dichlorobenzene	04.07.93	93073	17.4	20.0	<5	ug/L	87
2-Hexanone	04.07.93	93073	23.7	20.0	<30	ug/L	119
Acetone	04.07.93	93073	15.15	20.0	<50	ug/L	76
Bromodichloromethane	04.07.93	93073	21.4	20.0	<3	ug/L	107
Bromomethane	04.07.93	93073	12.55	20.0	<5	ug/L	63
Benzene	04.07.93	93073	61.6	66.3	46	ug/L	SOR
Bromoform	04.07.93	93073	16.4	20.0	<5	ug/L	82
Chlorobenzene	04.07.93	93073	19.95	20.0	<5	ug/L	100
Carbon Tetrachloride	04.07.93	93073	16.1	20.0	<3	ug/L	81
Chloroethane	04.07.93	93073	15.85	20.0	<5	ug/L	79
Chloroform	04.07.93	93073	19.7	20.0	<3	ug/L	99
Chloromethane	04.07.93	93073	14.65	20.0	<5	ug/L	73

SOR = Spike Out of Range
relative to high sample concentration)

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Carbon Disulfide	04.07.93	93073	16.35	20.0	<10	ug/L	82
Dibromochloromethane	04.07.93	93073	18.65	20.0	<5	ug/L	93
Methyl ethyl ketone	04.07.93	93073	17.15	20.0	<30	ug/L	86
Methyl isobutyl ketone	04.07.93	93073	25.2	20.0	<20	ug/L	126
Methylene chloride	04.07.93	93073	16.35	20.0	<5	ug/L	82
Styrene	04.07.93	93073	33.9	34.0	14	ug/L	100
Trichloroethene	04.07.93	93073	33.2	37.5	18	ug/L	78
Trichlorofluoromethane	04.07.93	93073	13.8	20.0	<5	ug/L	69
Toluene	04.07.93	93073	27.6	28.0	8.0	ug/L	98
Tetrachloroethene	04.07.93	93073	55.65	64.8	45	ug/L	SOR
Vinyl acetate	04.07.93	93073	2.99	20.0	<10	ug/L	15
Vinyl chloride	04.07.93	93073	14.45	20.0	<3	ug/L	72
Total Xylene Isomers	04.07.93	93073	110.5	96.0	36	ug/L	124
cis-1,3-Dichloropropene	04.07.93	93073	22.3	20.0	<3	ug/L	112
trans-1,2-Dichloroethene	04.07.93	93073	16.2	20.0	<5	ug/L	81
trans-1,3-Dichloropropene	04.07.93	93073	17.9	20.0	<5	ug/L	90
1,2-Dichloroethane-d4 Reported	04.07.93	93073	45.7	50.0	44.7	ug/L	SOR
4-Bromofluorobenzene Reported	04.07.93	93073	55.75	50.0	55.3	ug/L	SOR
Toluene-d8 Reported	04.07.93	93073	51.45	50.0	51.8	ug/L	SOR
Arsenic (7060)	04.05.93	93435	0.0236	0.0250	<0.002	mg/L	94
Antimony (6010)	04.05.93	93429	2.475	3.00	<0.06	mg/L	83
Barium (6010)	04.05.93	93429	0.5785	0.610	0.11	mg/L	94
Barium (6010)	04.05.93	93429	0.5535	0.587	0.087	mg/L	93
Beryllium (6010)	04.08.93	93429	0.0923	0.100	<0.002	mg/L	92
Cadmium (7131)	04.08.93	93435	0.0286	0.0300	0.005	mg/L	94
Chromium (7191)	04.05.93	93435	0.0523	0.0600	<0.005	mg/L	87
Cobalt (6010)	04.05.93	93429	0.4485	0.500	<0.04	mg/L	90
Cobalt (6010)	04.07.93	93429	0.4465	0.500	<0.04	mg/L	89
Lead (7421)	04.08.93	93435	0.064	0.0690	0.049	mg/L	SOR
Mercury (EPA 7470)	04.05.93	93433	0.0019	0.0020	<0.0002	mg/L	95
Molybdenum (6010)	04.05.93	93429	2.765	3.00	<0.04	mg/L	92
Nickel (6010)	04.05.93	93429	0.463	0.500	<0.04	mg/L	93
Nickel (6010)	04.07.93	93429	0.4635	0.500	<0.04	mg/L	93
Selenium (7740)	04.05.93	93435	0.0497	0.0500	<0.004	mg/L	99
Silver (6010)	04.05.93	93429	0.5105	0.500	<0.01	mg/L	102
Silver (6010)	04.05.93	93429	0.5145	0.500	<0.01	mg/L	103
Thallium (6010)	04.05.93	93429	2.695	3.00	<0.4	mg/L	90

SOR = Spike Out of Range
(relative to high sample concentration)

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCEN RECOVER
Vanadium (6010)	04.05.93	93429	0.4725	0.500	<0.04	mg/L	9
Vanadium (6010)	04.15.93	93429	0.466	0.500	<0.04	mg/L	9
Halocarbons (EPA 601)							
1,1,1-Trichloroethane		93079	3880	4000	<100	ug/L	9
1,1,2,2-Tetrachloroethane		93079	4600	4000	<100	ug/L	11
1,1,2-Trichloroethane		93079	4610	4000	<100	ug/L	11
1,1-Dichloroethane		93079	3380	4000	<100	ug/L	8
1,1-Dichloroethene		93079	2555	4000	<100	ug/L	6
1,2-Dichloroethane		93079	4285	4000	<100	ug/L	10
1,2-Dichlorobenzene		93079	4055	4000	<100	ug/L	10
1,2-Dichloropropane		93079	4285	4000	<100	ug/L	10
1,3-Dichlorobenzene		93079	4205	4000	<100	ug/L	10
1,4-Dichlorobenzene		93079	4395	4000	<100	ug/L	11
Bromodichloromethane		93079	4040	4000	<100	ug/L	10
Bromoform		93079	3870	4000	<100	ug/L	9
Chlorobenzene		93079	4380	4000	<100	ug/L	11
Carbon Tetrachloride		93079	3750	4000	<100	ug/L	9
Chloroethane		93079	1600	4000	<100	ug/L	4
Chloroform		93079	4235	4000	<100	ug/L	10
Dibromochloromethane		93079	4430	4000	<100	ug/L	11
Methylene chloride		93079	3420	4000	<100	ug/L	8
Trichloroethene		93079	4315	4000	<100	ug/L	10
Trichlorofluoromethane		93079	1455	4000	<100	ug/L	3
Tetrachloroethene		93079	4190	4000	<100	ug/L	10
cis-1,3-Dichloropropene		93079	4195	4000	<100	ug/L	10
trans-1,2-Dichloroethene		93079	3220	4000	<100	ug/L	81
trans-1,3-Dichloropropene		93079	3930	4000	<100	ug/L	9

SOR = Spike Out of Range
(relative to high sample concentration)

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BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	04.05.93	9315	<1	<1	mg/L	NA
Bicarbonate Alk (as CaCO3)	04.05.93	9315	668	674	mg/L	1
Hydroxide Alk (as CaCO3)	04.05.93	9315	<1	<1	mg/L	NA
Total Alkalinity (as CaCO3)	04.05.93	9315	668	674	mg/L	1
Calcium (6010)	04.05.93	93429	76.1	74.3	mg/L	2
Magnesium (6010)	04.05.93	93429	67.3	65.4	mg/L	3
Chloride (325.3)	04.07.93	9322	38.4	38.1	mg/L	1
Copper (6010)	04.05.93	93429	0.434	0.423	mg/L	3
Surfactants, MBAS (425.1)	04.03.93	9332	1.08	1.12	mg/L	4
Iron (EPA 6010)						
Iron (6010)	04.05.93	93429	1.92	1.92	mg/L	0
Iron (6010)	04.05.93	93429	1.11	1.09	mg/L	2
Manganese (EPA 6010)						
Manganese (6010)	04.05.93	93429	0.769	0.769	mg/L	0
Manganese (6010)	04.05.93	93429	0.112	0.110	mg/L	2
Potassium (6010)	04.05.93	93429	52.6	51.2	mg/L	3
Sodium (6010)	04.05.93	93429	81.1	78.8	mg/L	3
Sulfate (375.4)	04.12.93	9320	1320	1360	mg/L	3
Filterable Residue, TDS (160.1)	04.03.93	9324	2380	2430	mg/L	2
Zinc (6010)	04.05.93	93429	0.471	0.464	mg/L	1
Zinc (6010)	04.05.93	93429	3.96	3.85	mg/L	3
Nitrate (353.2)						
Nitrate (as N)	04.07.93	93136	4.24	4.15	mg/L	2
Nitrate (as NO3)	04.07.93	93136	18.8	18.4	mg/L	2
Aluminum (6010)	04.05.93	93429	1.01	0.995	mg/L	1
Aluminum (6010)	04.05.93	93429	1.00	0.976	mg/L	2
Fluoride (340.2)	04.12.93	9315	1.27	1.33	mg/L	5
Cyanide (9010)	04.08.93	9352	0.199	0.212	mg/L	6
Phenolics (9065)	04.13.93	9323	0.592	0.564	mg/L	5
B/N,A Ext.Pri.Poll. (EPA 8270)						
1,2,4-Trichlorobenzene	04.08.93	9362	33.9	37.5	ug/L	10
1,4-Dichlorobenzene	04.08.93	9362	33.0	37.1	ug/L	12
2,4-Dinitrotoluene	04.08.93	9362	40.0	43.8	ug/L	9
2-Chlorophenol	04.08.93	9362	52.7	57.0	ug/L	8
4-Chloro-3-methylphenol	04.08.93	9362	69.8	74.0	ug/L	6
4-Nitrophenol	04.08.93	9362	39.4	43.6	ug/L	10

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PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Acenaphthene	04.08.93	9362	36.8	39.5	ug/L	7
N-Nitrosodi-n-propylamine	04.08.93	9362	40.5	44.0	ug/L	8
Phenol	04.08.93	9362	46.6	50.7	ug/L	8
Pentachlorophenol	04.08.93	9362	55.2	62.3	ug/L	12
Pyrene	04.08.93	9362	46.7	48.9	ug/L	5
EPA 8080 Pesticides						
Aldrin	04.06.93	9381	0.393	0.420	ug/L	7
p,p'-DDT	04.06.93	9381	0.445	0.466	ug/L	5
Dieldrin	04.06.93	9381	0.420	0.443	ug/L	5
Endrin	04.06.93	9381	0.389	0.462	ug/L	17
Heptachlor	04.06.93	9381	0.387	0.415	ug/L	7
Aroclor 1260	04.06.93	9381	7.44	6.70	ug/L	10
Total PCB's	04.06.93	9381	7.44	6.70	ug/L	10
BHC, gamma isomer (Lindane)	04.06.93	9381	0.433	0.446	ug/L	3
Decachlorobiphenyl Reported	04.06.93	9381	0.403	0.448	ug/L	11
Decachlorobiphenyl Theoretical	04.06.93	9381	0.500	0.500	ug/L	0
Tetrachloro-meta-xylene Rpt.	04.06.93	9381	0.335	0.367	ug/L	9
Tetrachloro-meta-xylene Theor.	04.06.93	9381	0.500	0.500	ug/L	0
EPA 8240 - Vol. Pri. Poll.						
1,1,1-Trichloroethane	04.05.93	93073	15.0	15.8	ug/L	5
1,1,2,2-Tetrachloroethane	04.05.93	93073	20.2	21.9	ug/L	8
1,1,2-Trichloroethane	04.05.93	93073	19.9	21.6	ug/L	8
1,1-Dichloroethane	04.05.93	93073	17.4	18.5	ug/L	6
1,1-Dichloroethene	04.05.93	93073	14.7	15.1	ug/L	3
1,2-Dichloroethane	04.05.93	93073	22.4	23.7	ug/L	6
1,2-Dichlorobenzene	04.05.93	93073	17.8	18.7	ug/L	5
1,2-Dichloropropane	04.05.93	93073	24.4	25.8	ug/L	6
1,3-Dichlorobenzene	04.05.93	93073	18.0	19.1	ug/L	6
1,4-Dichlorobenzene	04.05.93	93073	17.0	17.8	ug/L	5
2-Hexanone	04.05.93	93073	22.7	24.7	ug/L	8
Acetone	04.05.93	93073	14.9	15.4	ug/L	3
Bromodichloromethane	04.05.93	93073	20.7	22.1	ug/L	7
Bromomethane	04.05.93	93073	12.5	12.6	ug/L	1
Benzene	04.05.93	93073	60.1	63.1	ug/L	5
Bromoform	04.05.93	93073	15.9	16.9	ug/L	6
Chlorobenzene	04.05.93	93073	19.4	20.5	ug/L	6
Carbon Tetrachloride	04.05.93	93073	15.6	16.6	ug/L	6

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MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Chloroethane	04.05.93	93073	15.9	15.8	ug/L	1
Chloroform	04.05.93	93073	19.2	20.2	ug/L	5
Chloromethane	04.05.93	93073	14.7	14.6	ug/L	1
Carbon Disulfide	04.05.93	93073	15.9	16.8	ug/L	6
Dibromochloromethane	04.05.93	93073	17.8	19.5	ug/L	9
Methyl ethyl ketone	04.05.93	93073	16.5	17.8	ug/L	8
Methyl isobutyl ketone	04.05.93	93073	24.2	26.2	ug/L	8
Methylene chloride	04.05.93	93073	15.9	16.8	ug/L	6
Styrene	04.05.93	93073	35.5	32.3	ug/L	9
Trichloroethene	04.05.93	93073	32.6	33.8	ug/L	4
Trichlorofluoromethane	04.05.93	93073	13.4	14.2	ug/L	6
Toluene	04.05.93	93073	26.8	28.4	ug/L	6
Tetrachloroethene	04.05.93	93073	54.1	57.2	ug/L	6
Vinyl acetate	04.05.93	93073	2.94	3.04	ug/L	3
Vinyl chloride	04.05.93	93073	14.6	14.3	ug/L	2
Total Xylene Isomers	04.05.93	93073	107	114	ug/L	6
cis-1,3-Dichloropropene	04.05.93	93073	21.8	22.8	ug/L	4
trans-1,2-Dichloroethene	04.05.93	93073	15.7	16.7	ug/L	6
trans-1,3-Dichloropropene	04.05.93	93073	17.2	18.6	ug/L	8
1,2-Dichloroethane-d4 Reported	04.05.93	93073	45.2	46.2	ug/L	2
1,2-Dichloroethane-d4 Theo.	04.05.93	93073	50.0	50.0	ug/L	0
4-Bromofluorobenzene Reported	04.05.93	93073	55.8	55.7	ug/L	0
4-Bromofluorobenzene Theo.	04.05.93	93073	50.0	50.0	ug/L	0
Toluene-d8 Reported	04.05.93	93073	51.4	51.5	ug/L	0
Toluene-d8 Theo.	04.05.93	93073	50.0	50.0	ug/L	0
rsenic (7060)	04.07.93	93435	0.0233	0.0239	mg/L	3
Antimony (6010)	04.05.93	93429	2.52	2.43	mg/L	4
Barium (6010)	04.05.93	93429	0.580	0.577	mg/L	1
arium (6010)	04.05.93	93429	0.561	0.546	mg/L	3
Beryllium (6010)	04.05.93	93429	0.0936	0.0911	mg/L	3
Cadmium (7131)	04.08.93	93435	0.0284	0.0288	mg/L	1
hromium (7191)	04.08.93	93435	0.0510	0.0537	mg/L	5
obalt (6010)	04.05.93	93429	0.451	0.446	mg/L	1
Cobalt (6010)	04.05.93	93429	0.452	0.441	mg/L	2
ead (7421)	04.07.93	93435	0.0637	0.0643	mg/L	1
lercury (EPA 7470)	04.08.93	93433	0.0020	0.0018	mg/L	11
Molybdenum (6010)	04.05.93	93429	2.80	2.73	mg/L	3

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PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE %DIFF
Nickel (6010)	04.05.93	93429	0.467	0.459	mg/L	2
Nickel (6010)	04.05.93	93429	0.464	0.463	mg/L	0
Selenium (7740)	04.07.93	93435	0.0499	0.0496	mg/L	1
Silver (6010)	04.05.93	93429	0.524	0.497	mg/L	5
Silver (6010)	04.05.93	93429	0.492	0.537	mg/L	9
Thallium (6010)	04.05.93	93429	2.71	2.68	mg/L	1
Vanadium (6010)	04.05.93	93429	0.475	0.470	mg/L	1
Vanadium (6010)	04.05.93	93429	0.472	0.460	mg/L	3
Halocarbons (EPA 601)						
1,1,1-Trichloroethane	04.15.93	93079	3820	3940	ug/L	3
1,1,2,2-Tetrachloroethane	04.15.93	93079	4570	4630	ug/L	1
1,1,2-Trichloroethane	04.15.93	93079	4580	4640	ug/L	1
1,1-Dichloroethane	04.15.93	93079	3360	3400	ug/L	1
1,1-Dichloroethene	04.15.93	93079	2460	2650	ug/L	7
1,2-Dichloroethane	04.15.93	93079	4270	4300	ug/L	1
1,2-Dichlorobenzene	04.15.93	93079	4030	4080	ug/L	1
1,2-Dichloropropane	04.15.93	93079	4260	4310	ug/L	1
1,3-Dichlorobenzene	04.15.93	93079	4140	4270	ug/L	3
1,4-Dichlorobenzene	04.15.93	93079	4310	4480	ug/L	4
Bromodichloromethane	04.15.93	93079	4030	4050	ug/L	0
Bromoform	04.15.93	93079	3830	3910	ug/L	2
Chlorobenzene	04.15.93	93079	4320	4440	ug/L	3
Carbon Tetrachloride	04.15.93	93079	3650	3850	ug/L	5
Chloroethane	04.15.93	93079	1580	1620	ug/L	3
Chloroform	04.15.93	93079	4220	4250	ug/L	1
Dibromochloromethane	04.15.93	93079	4400	4460	ug/L	1
Methylene chloride	04.15.93	93079	3380	3460	ug/L	2
Trichloroethene	04.15.93	93079	4260	4370	ug/L	3
Trichlorofluoromethane	04.15.93	93079	1390	1520	ug/L	9
Tetrachloroethene	04.15.93	93079	4080	4300	ug/L	5
cis-1,3-Dichloropropene	04.15.93	93079	4170	4220	ug/L	1
trans-1,2-Dichloroethene	04.15.93	93079	3190	3250	ug/L	2
trans-1,3-Dichloropropene	04.15.93	93079	3930	3930	ug/L	0

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LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Alkalinity (310.1)						
Bicarbonate Alk (as CaCO3)	04.05.93	9315	599	596	mg/L	101
Total Alkalinity (as CaCO3)	04.05.93	9315	599	596	mg/L	101
Calcium (6010)	04.05.93	93429	51.0	50.0	mg/L	102
Magnesium (6010)	04.05.93	93429	47.1	50.0	mg/L	94
Chloride (325.3)	04.07.93	9322	19.9	20.0	mg/L	100
Copper (6010)	04.05.93	93429	2.58	3.00	mg/L	86
Surfactants, MBAS (425.1)	04.03.93	9332	1.01	1.00	mg/L	101
Iron (6010)	04.05.93	93429	2.92	3.00	mg/L	97
Manganese (EPA 6010)						
Manganese (6010)	04.05.93	93429	2.92	3.00	mg/L	97
pH (150.1/9040)	04.02.93	93183	5.98	6.00	Units	100
Potassium (6010)	04.05.93	93429	47.1	50.0	mg/L	94
Sodium (6010)	04.05.93	93429	47.3	50.0	mg/L	95
Sulfate (375.4)	04.12.93	9320	19.5	20.0	mg/L	98
Conductivity (120.1)	04.03.93	9342	1388	1413	umhos/cm	98
Filterable Residue, TDS (160.1)	04.03.93	9324	1040	1000	mg/L	104
Zinc (6010)	04.05.93	93429	2.79	3.00	mg/L	93
Nitrate (353.2)						
Nitrate (as N)	04.07.93	93136	4.62	4.50	mg/L	103
Nitrate (as NO3)	04.07.93	93136	20.5	20.0	mg/L	103
Aluminum (6010)	04.05.93	93429	2.77	3.00	mg/L	92
Fluoride (340.2)	04.12.93	9315	0.959	1.00	mg/L	96
Cyanide (9010)	04.08.93	9352	0.182	0.190	mg/L	96
COD (410.4)	04.05.93	93117	99.6	100	mg/L	100
Phenolics (9065)	04.13.93	9323	0.577	0.500	mg/L	115
B/N,A Ext.Pri.Poll. (EPA 8270)						
1,2,4-Trichlorobenzene	04.08.93	9362	71.9	100	ug/L	72
1,2-Dichlorobenzene	04.08.93	9362	60.4	100	ug/L	60
1,2-Diphenylhydrazine	04.08.93	9362	77.9	100	ug/L	78
1,3-Dichlorobenzene	04.08.93	9362	58.8	100	ug/L	59
1,4-Dichlorobenzene	04.08.93	9362	57.9	100	ug/L	58
2,4,5-Trichlorophenol	04.08.93	9362	79.9	100	ug/L	80
2,4,6-Trichlorophenol	04.08.93	9362	72.8	100	ug/L	73
2,4-Dichlorophenol	04.08.93	9362	78.0	100	ug/L	78
2,4-Dimethylphenol	04.08.93	9362	75.0	100	ug/L	75
2,4-Dinitrophenol	04.08.93	9362	31.6	100	ug/L	32

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2,4-Dinitrotoluene	04.08.93	9362	90.0	100	ug/L	90
2,6-Dinitrotoluene	04.08.93	9362	76.2	100	ug/L	76
2-Chloronaphthalene	04.08.93	9362	60.9	100	ug/L	61
2-Chlorophenol	04.08.93	9362	68.6	100	ug/L	69
2-Methyl-4,6-dinitrophenol	04.08.93	9362	42.7	100	ug/L	43
2-Methylnaphthalene	04.08.93	9362	67.4	100	ug/L	67
2-Methylphenol (o-Cresol)	04.08.93	9362	77.6	100	ug/L	78
2-Nitroaniline	04.08.93	9362	70.9	100	ug/L	71
2-Nitrophenol	04.08.93	9362	63.1	100	ug/L	63
3,3'-Dichlorobenzidine	04.08.93	9362	66.1	100	ug/L	66
3-Nitroaniline	04.08.93	9362	73.6	100	ug/L	74
4-Bromophenylphenylether	04.08.93	9362	89.3	100	ug/L	89
4-Chloro-3-methylphenol	04.08.93	9362	85.1	100	ug/L	85
4-Chloroaniline	04.08.93	9362	66.5	100	ug/L	67
4-Chlorophenylphenylether	04.08.93	9362	76.9	100	ug/L	77
4-Methylphenol (p-Cresol)	04.08.93	9362	99.4	100	ug/L	99
4-Nitroaniline	04.08.93	9362	59.7	100	ug/L	60
4-Nitrophenol	04.08.93	9362	36.0	100	ug/L	36
Acenaphthene	04.08.93	9362	77.4	100	ug/L	77
Acenaphthylene	04.08.93	9362	71.7	100	ug/L	72
Aniline	04.08.93	9362	68.9	100	ug/L	69
Anthracene	04.08.93	9362	74.9	100	ug/L	75
Benzidine	04.08.93	9362	7.54	100	ug/L	8
Benzo(a)anthracene	04.08.93	9362	78.1	100	ug/L	78
Benzo(a)pyrene	04.08.93	9362	82.0	100	ug/L	82
Benzo(b)fluoranthene	04.08.93	9362	67.2	100	ug/L	67
Benzo(g,h,i)perylene	04.08.93	9362	56.6	100	ug/L	57
Benzo(k)fluoranthene	04.08.93	9362	100	100	ug/L	100
Benzyl Alcohol	04.08.93	9362	68.2	100	ug/L	68
Benzoic acid	04.08.93	9362	23.5	100	ug/L	24
Butylbenzylphthalate	04.08.93	9362	91.8	100	ug/L	92
Chrysene	04.08.93	9362	87.5	100	ug/L	88
Di-n-octylphthalate	04.08.93	9362	117	100	ug/L	117
Dibenzo(a,h)anthracene	04.08.93	9362	63.8	100	ug/L	64
Dibenzofuran	04.08.93	9362	79.9	100	ug/L	80
Dibutylphthalate	04.08.93	9362	85.1	100	ug/L	85
Diethylphthalate	04.08.93	9362	90.7	100	ug/L	91

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LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Dimethylphthalate	04.08.93	9362	92.7	100	ug/L	93
Fluoranthene	04.08.93	9362	76.3	100	ug/L	76
Fluorene	04.08.93	9362	81.0	100	ug/L	81
Hexachlorobenzene	04.08.93	9362	70.1	100	ug/L	70
Hexachlorobutadiene	04.08.93	9362	68.1	100	ug/L	68
Hexachlorocyclopentadiene	04.08.93	9362	66.6	100	ug/L	67
Hexachloroethane	04.08.93	9362	55.8	100	ug/L	56
Indeno(1,2,3-c,d)pyrene	04.08.93	9362	56.4	100	ug/L	56
Isophorone	04.08.93	9362	84.5	100	ug/L	85
N-Nitrosodimethylamine	04.08.93	9362	56.7	100	ug/L	57
N-Nitrosodiphenylamine	04.08.93	9362	80.7	100	ug/L	81
N-Nitrosodi-n-propylamine	04.08.93	9362	78.5	100	ug/L	79
Nitrobenzene	04.08.93	9362	71.2	100	ug/L	71
Naphthalene	04.08.93	9362	64.9	100	ug/L	65
Phenanthrene	04.08.93	9362	83.5	100	ug/L	84
Phenol	04.08.93	9362	49.8	100	ug/L	50
Pentachlorophenol	04.08.93	9362	55.0	100	ug/L	55
Pyrene	04.08.93	9362	80.3	100	ug/L	80
Bis(2-chloroethoxy)methane	04.08.93	9362	80.2	100	ug/L	80
Bis(2-chloroethyl)ether	04.08.93	9362	75.5	100	ug/L	76
Bis(2-chloroisopropyl)ether	04.08.93	9362	58.5	100	ug/L	59
Bis(2-ethylhexyl)phthalate	04.08.93	9362	96.2	100	ug/L	96
EPA 8080 Pesticides						
Aldrin	04.06.93	9381	0.523	0.500	ug/L	105
p,p'-DDD	04.06.93	9381	0.668	0.500	ug/L	134
p,p'-DDE	04.06.93	9381	0.641	0.500	ug/L	128
p,p'-DDT	04.06.93	9381	0.629	0.500	ug/L	126
Dieldrin	04.06.93	9381	0.651	0.500	ug/L	130
Endosulfan I	04.06.93	9381	0.645	0.500	ug/L	129
Endosulfan II	04.06.93	9381	0.654	0.500	ug/L	131
Endosulfan sulfate	04.06.93	9381	0.676	0.500	ug/L	135
Endrin	04.06.93	9381	0.685	0.500	ug/L	137
Endrin aldehyde	04.06.93	9381	0.519	0.500	ug/L	104
Heptachlor epoxide	04.06.93	9381	0.636	0.500	ug/L	127
Heptachlor	04.06.93	9381	0.665	0.500	ug/L	133
Aroclor 1260	04.06.93	9381	11.0	10.0	ug/L	110
Total PCB's	04.06.93	9381	11.0	10.0	ug/L	110

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BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
BHC, alpha isomer	04.06.93	9381	0.661	0.500	ug/L	132
BHC, beta isomer	04.06.93	9381	0.555	0.500	ug/L	111
BHC, delta isomer	04.06.93	9381	0.638	0.500	ug/L	128
BHC, gamma isomer (Lindane)	04.06.93	9381	0.625	0.500	ug/L	125
Decachlorobiphenyl Reported	04.06.93	9381	0.489	0.500	ug/L	98
Decachlorobiphenyl Theoretical	04.06.93	9381	0.500	0.500	ug/L	100
Tetrachloro-meta-xylene Rpt.	04.06.93	9381	0.406	0.500	ug/L	81
Tetrachloro-meta-xylene Theor.	04.06.93	9381	0.500	0.500	ug/L	100
EPA 8240 - Vol. Pri. Poll.						
1,1,1-Trichloroethane	04.06.93	93073	16.5	20.0	ug/L	83
1,1,2,2-Tetrachloroethane	04.06.93	93073	22.8	20.0	ug/L	114
1,1,2-Trichloroethane	04.06.93	93073	22.1	20.0	ug/L	111
1,1-Dichloroethane	04.06.93	93073	19.4	20.0	ug/L	97
1,1-Dichloroethene	04.06.93	93073	15.4	20.0	ug/L	77
1,2-Dichloroethane	04.06.93	93073	24.9	20.0	ug/L	125
1,2-Dichlorobenzene	04.06.93	93073	19.3	20.0	ug/L	97
1,2-Dichloropropane	04.06.93	93073	26.7	20.0	ug/L	134
1,3-Dichlorobenzene	04.06.93	93073	19.7	20.0	ug/L	99
1,4-Dichlorobenzene	04.06.93	93073	18.3	20.0	ug/L	92
2-Hexanone	04.06.93	93073	26.8	20.0	ug/L	134
Acetone	04.06.93	93073	14.4	20.0	ug/L	72
Bromodichloromethane	04.06.93	93073	22.8	20.0	ug/L	114
Bromomethane	04.06.93	93073	13.8	20.0	ug/L	69
Benzene	04.06.93	93073	21.4	20.0	ug/L	107
Bromoform	04.06.93	93073	17.8	20.0	ug/L	89
Chlorobenzene	04.06.93	93073	21.0	20.0	ug/L	105
Carbon Tetrachloride	04.06.93	93073	17.3	20.0	ug/L	87
Chloroethane	04.06.93	93073	17.2	20.0	ug/L	86
Chloroform	04.06.93	93073	16.8	20.0	ug/L	84
Chloromethane	04.06.93	93073	15.9	20.0	ug/L	80
Carbon Disulfide	04.06.93	93073	17.1	20.0	ug/L	86
Dibromochloromethane	04.06.93	93073	20.3	20.0	ug/L	102
Ethylbenzene	04.06.93	93073	21.9	20.0	ug/L	110
Methyl ethyl ketone	04.06.93	93073	19.5	20.0	ug/L	98
Methyl isobutyl ketone	04.06.93	93073	28.7	20.0	ug/L	144
Methylene chloride	04.06.93	93073	17.0	20.0	ug/L	85
Styrene	04.06.93	93073	22.7	20.0	ug/L	114

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LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Trichloroethene	04.06.93	93073	19.6	20.0	ug/L	98
Trichlorofluoromethane	04.06.93	93073	14.3	20.0	ug/L	72
Toluene	04.06.93	93073	21.4	20.0	ug/L	107
Tetrachloroethene	04.06.93	93073	19.0	20.0	ug/L	95
Vinyl acetate	04.06.93	93073	3.32	20.0	ug/L	17
Vinyl chloride	04.06.93	93073	15.9	20.0	ug/L	80
Total Xylene Isomers	04.06.93	93073	82.0	60.0	ug/L	137
cis-1,3-Dichloropropene	04.06.93	93073	23.5	20.0	ug/L	118
trans-1,2-Dichloroethene	04.06.93	93073	17.0	20.0	ug/L	85
trans-1,3-Dichloropropene	04.06.93	93073	19.5	20.0	ug/L	98
1,2-Dichloroethane-d4 Reported	04.06.93	93073	46.8	50.0	ug/L	94
1,2-Dichloroethane-d4 Theo.	04.06.93	93073	50.0	50.0	ug/L	100
4-Bromofluorobenzene Reported	04.06.93	93073	55.4	50.0	ug/L	111
4-Bromofluorobenzene Theo.	04.06.93	93073	50.0	50.0	ug/L	100
Toluene-d8 Reported	04.06.93	93073	51.3	50.0	ug/L	103
Toluene-d8 Theo.	04.06.93	93073	50.0	50.0	ug/L	100
Arsenic (7060)	04.07.93	93435	0.0495	0.0500	mg/L	99
Antimony (6010)	04.06.93	93429	2.50	3.00	mg/L	83
Barium (6010)	04.05.93	93429	0.957	1.00	mg/L	96
Beryllium (6010)	04.06.93	93429	0.106	0.100	mg/L	106
Chromium (7191)	04.08.93	93435	0.0101	0.0100	mg/L	101
Cobalt (6010)	04.05.93	93429	2.69	3.00	mg/L	90
Lead (7421)	04.07.93	93435	0.0454	0.0500	mg/L	91
Mercury (EPA 7470)	04.08.93	93433	0.0041	0.0040	mg/L	103
Molybdenum (6010)	04.06.93	93429	2.75	3.00	mg/L	92
Nickel (6010)	04.05.93	93429	2.71	3.00	mg/L	90
Selenium (7740)	04.07.93	93435	0.0861	0.100	mg/L	86
Silver (6010)	04.05.93	93429	0.482	0.500	mg/L	96
Silver (6010)	04.05.93	93429	0.482	0.500	mg/L	96
Thallium (6010)	04.05.93	93429	2.62	3.00	mg/L	87
Vanadium (6010)	04.05.93	93429	2.82	3.00	mg/L	94
Halocarbons/EPA 8010						
1,1,1-Trichloroethane	04.15.93	93079	19.0	20.0	ug/L	95
1,1,2,2-Tetrachloroethane	04.15.93	93079	22.0	20.0	ug/L	110
1,1,2-Trichloroethane	04.15.93	93079	21.9	20.0	ug/L	110
1,1-Dichloroethane	04.15.93	93079	18.9	20.0	ug/L	95
1,1-Dichloroethene	04.15.93	93079	12.6	20.0	ug/L	63

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LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1,2-Dichloroethane	04.15.93	93079	20.6	20.0	ug/L	103
1,2-Dichlorobenzene	04.15.93	93079	19.1	20.0	ug/L	96
1,2-Dichloropropane	04.15.93	93079	20.1	20.0	ug/L	101
1,3-Dichlorobenzene	04.15.93	93079	19.4	20.0	ug/L	97
1,4-Dichlorobenzene	04.15.93	93079	20.8	20.0	ug/L	104
Bromodichloromethane	04.15.93	93079	18.9	20.0	ug/L	95
Bromoform	04.15.93	93079	18.4	20.0	ug/L	92
Chlorobenzene	04.15.93	93079	20.6	20.0	ug/L	103
Carbon Tetrachloride	04.15.93	93079	19.0	20.0	ug/L	95
Chloroethane	04.15.93	93079	7.48	20.0	ug/L	37
Chloroform	04.15.93	93079	19.9	20.0	ug/L	100
Dibromochloromethane	04.15.93	93079	20.8	20.0	ug/L	104
Methylene chloride	04.15.93	93079	16.4	20.0	ug/L	82
Trichloroethene	04.15.93	93079	20.1	20.0	ug/L	101
Trichlorofluoromethane	04.15.93	93079	7.99	20.0	ug/L	40
Tetrachloroethene	04.15.93	93079	20.2	20.0	ug/L	101
cis-1,3-Dichloropropene	04.15.93	93079	19.9	20.0	ug/L	100
trans-1,2-Dichloroethene	04.15.93	93079	15.2	20.0	ug/L	76
trans-1,3-Dichloropropene	04.15.93	93079	18.4	20.0	ug/L	92

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DATE REPORTED : 04/20/93

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Alkalinity (310.1)						
Carbonate Alk (as CaCO3)	04.05.93	9315	<1	1	mg/L	310.1
Bicarbonate Alk (as CaCO3)	04.05.93	9315	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	04.05.93	9315	<1	1	mg/L	310.1
Total Alkalinity (as CaCO3)	04.05.93	9315	0	10	mg/L	310.1
Calcium (6010)	04.05.93	93429	0.090	0.5	mg/L	6010
Magnesium (6010)	04.05.93	93429	0	0.1	mg/L	6010
Chloride (325.3)	04.07.93	9322	0	0.5	mg/L	325.3
Copper (6010)	04.05.93	93429	0	0.02	mg/L	6010
Surfactants, MBAS (425.1)	04.03.93	9332	0.02	0.1	mg/L	425.1
Iron (EPA 6010)						
Date Analyzed	04.05.93	93429	4/05/93	NA	Date	6010
Iron (6010)	04.05.93	93429	0.017	0.04	mg/L	6010
Manganese (EPA 6010)						
Date Analyzed	04.05.93	93429	4/05/93	NA	Date	6010
Manganese (6010)	04.05.93	93429	0	0.01	mg/L	6010
Manganese (6010)	04.05.93	93429	0	0.01	mg/L	6010
Potassium (6010)	04.05.93	93429	0	0.5	mg/L	6010
Sodium (6010)	04.05.93	93429	0.28	0.5	mg/L	6010
Sulfate (375.4)	04.12.93	9320	0	2	mg/L	375.4
Filterable Residue, TDS (160.1)	04.03.93	9324	0	10	mg/L	160.1
Zinc (6010)	04.05.93	93429	0	0.01	mg/L	6010
Nitrate (353.2)						
Nitrate (as N)	04.07.93	93136	0	0.05	mg/L	353.2
Nitrate (as NO3)	04.07.93	93136	0	0.2	mg/L	353.2
SW3005/ICP Digest	04.05.93	93429	4/05/93	NA	Date	3005
Aluminum (6010)	04.05.93	93429	0.01	0.1	mg/L	6010
Fluoride (340.2)	04.12.93	9315	0.01	0.05	mg/L	340.2
Furnace Digestion (3020)	04.07.93	93435	4/07/93	NA	Date	3020
Cyanide (9010)	04.08.93	9352	0	0.02	mg/L	335.2
COD (410.4)	04.05.93	93117	0	6	mg/L	410.4
Phenolics (9065)	04.13.93	9323	0.007	0.05	mg/L	420.1
B/N,A Ext.Pri.Poll. (EPA 8270)						
Date Analyzed	04.08.93	9362	4/08/93	NA	Date	8270
Date Extracted	04.08.93	9362	4/06/93	NA	Date	8270
1,2,4-Trichlorobenzene	04.08.93	9362	0	5	ug/L	8270
1,2-Dichlorobenzene	04.08.93	9362	0	6	ug/L	8270

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1,2-Diphenylhydrazine	04.08.93	9362	0	5	ug/L	8270
1,3-Dichlorobenzene	04.08.93	9362	0	5	ug/L	8270
1,4-Dichlorobenzene	04.08.93	9362	0	5	ug/L	8270
2,4,5-Trichlorophenol	04.08.93	9362	0	6	ug/L	8270
2,4,6-Trichlorophenol	04.08.93	9362	0	5	ug/L	8270
2,4-Dichlorophenol	04.08.93	9362	0	5	ug/L	8270
2,4-Dimethylphenol	04.08.93	9362	0	5	ug/L	8270
2,4-Dinitrophenol	04.08.93	9362	0	5	ug/L	8270
2,4-Dinitrotoluene	04.08.93	9362	0	5	ug/L	8270
2,6-Dinitrotoluene	04.08.93	9362	0	5	ug/L	8270
2-Chloronaphthalene	04.08.93	9362	0	6	ug/L	8270
2-Chlorophenol	04.08.93	9362	0	5	ug/L	8270
2-Methyl-4,6-dinitrophenol	04.08.93	9362	0	5	ug/L	8270
2-Methylnaphthalene	04.08.93	9362	0	5	ug/L	8270
2-Methylphenol (o-Cresol)	04.08.93	9362	0	5	ug/L	8270
2-Nitroaniline	04.08.93	9362	0	5	ug/L	8270
2-Nitrophenol	04.08.93	9362	0	5	ug/L	8270
3,3'-Dichlorobenzidine	04.08.93	9362	0	20	ug/L	8270
3-Nitroaniline	04.08.93	9362	0	5	ug/L	8270
4-Bromophenylphenylether	04.08.93	9362	0	5	ug/L	8270
4-Chloro-3-methylphenol	04.08.93	9362	0	5	ug/L	8270
4-Chloroaniline	04.08.93	9362	0	5	ug/L	8270
4-Chlorophenylphenylether	04.08.93	9362	0	5	ug/L	8270
4-Methylphenol (p-Cresol)	04.08.93	9362	0	8	ug/L	8270
4-Nitroaniline	04.08.93	9362	0	6	ug/L	8270
4-Nitrophenol	04.08.93	9362	0	5	ug/L	8270
Acenaphthene	04.08.93	9362	0	5	ug/L	8270
Acenaphthylene	04.08.93	9362	0	5	ug/L	8270
Aniline	04.08.93	9362	0	5	ug/L	8270
Anthracene	04.08.93	9362	0	5	ug/L	8270
Benzidine	04.08.93	9362	0	200	ug/L	8270
Benzo(a)anthracene	04.08.93	9362	0	5	ug/L	8270
Benzo(a)pyrene	04.08.93	9362	0	5	ug/L	8270
Benzo(b)fluoranthene	04.08.93	9362	0	5	ug/L	8270
Benzo(g,h,i)perylene	04.08.93	9362	0	5	ug/L	8270
Benzo(k)fluoranthene	04.08.93	9362	0	5	ug/L	8270
Benzyl Alcohol	04.08.93	9362	0	5	ug/L	8270

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Benzoic acid	04.08.93	9362	0	50	ug/L	8270
Butylbenzylphthalate	04.08.93	9362	0	5	ug/L	8270
Chrysene	04.08.93	9362	0	5	ug/L	8270
Di-n-octylphthalate	04.08.93	9362	0	5	ug/L	8270
Dibenzo(a,h)anthracene	04.08.93	9362	0	5	ug/L	8270
Dibenzofuran	04.08.93	9362	0	5	ug/L	8270
Dibutylphthalate	04.08.93	9362	0	5	ug/L	8270
Diethylphthalate	04.08.93	9362	0	5	ug/L	8270
Dimethylphthalate	04.08.93	9362	0	5	ug/L	8270
Fluoranthene	04.08.93	9362	0	5	ug/L	8270
Fluorene	04.08.93	9362	0	5	ug/L	8270
Hexachlorobenzene	04.08.93	9362	0	5	ug/L	8270
Hexachlorobutadiene	04.08.93	9362	0	5	ug/L	8270
Hexachlorocyclopentadiene	04.08.93	9362	0	5	ug/L	8270
Hexachloroethane	04.08.93	9362	0	5	ug/L	8270
Indeno(1,2,3-c,d)pyrene	04.08.93	9362	0	7	ug/L	8270
Isophorone	04.08.93	9362	0	5	ug/L	8270
N-Nitrosodimethylamine	04.08.93	9362	0	6	ug/L	8270
N-Nitrosodiphenylamine	04.08.93	9362	0	5	ug/L	8270
N-Nitrosodi-n-propylamine	04.08.93	9362	0	6	ug/L	8270
Nitrobenzene	04.08.93	9362	0	5	ug/L	8270
Naphthalene	04.08.93	9362	0	5	ug/L	8270
Phenanthrene	04.08.93	9362	0	5	ug/L	8270
Phenol	04.08.93	9362	0	5	ug/L	8270
Pentachlorophenol	04.08.93	9362	0	5	ug/L	8270
Pyrene	04.08.93	9362	0	5	ug/L	8270
Bis(2-chloroethoxy)methane	04.08.93	9362	0	5	ug/L	8270
Bis(2-chloroethyl)ether	04.08.93	9362	0	5	ug/L	8270
Bis(2-chloroisopropyl)ether	04.08.93	9362	0	6	ug/L	8270
Bis(2-ethylhexyl)phthalate	04.08.93	9362	3.2	7	ug/L	8270
EPA 8080 Pesticides						
Date Analyzed	04.06.93	9381	4/06/93	NA	Date	8080
Date Extracted	04.06.93	9381	4/05/93	NA	Date	8080
Aldrin	04.06.93	9381	0	0.04	ug/L	8080
Chlordane	04.06.93	9381	0	0.4	ug/L	8080
p,p'-DDD	04.06.93	9381	0	0.04	ug/L	8080
p,p'-DDE	04.06.93	9381	0	0.04	ug/L	8080

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
p,p'-DDT	04.06.93	9381	0	0.04	ug/L	8080
Dieldrin	04.06.93	9381	0	0.05	ug/L	8080
Endosulfan I	04.06.93	9381	0	0.05	ug/L	8080
Endosulfan II	04.06.93	9381	0	0.05	ug/L	8080
Endosulfan sulfate	04.06.93	9381	0	0.1	ug/L	8080
Endrin	04.06.93	9381	0	0.05	ug/L	8080
Endrin aldehyde	04.06.93	9381	0	0.04	ug/L	8080
Heptachlor epoxide	04.06.93	9381	0	0.05	ug/L	8080
Heptachlor	04.06.93	9381	0	0.03	ug/L	8080
Methoxychlor	04.06.93	9381	0	0.05	ug/L	8080
Aroclor 1016	04.06.93	9381	0	1	ug/L	8080
Aroclor 1221	04.06.93	9381	0	1	ug/L	8080
Aroclor 1232	04.06.93	9381	0	1	ug/L	8080
Aroclor 1242	04.06.93	9381	0	1	ug/L	8080
Aroclor 1248	04.06.93	9381	0	1	ug/L	8080
Aroclor 1254	04.06.93	9381	0	1	ug/L	8080
Aroclor 1260	04.06.93	9381	0	1	ug/L	8080
Total PCB's	04.06.93	9381	0	1	ug/L	8080
Toxaphene	04.06.93	9381	0	0.5	ug/L	8080
BHC, alpha isomer	04.06.93	9381	0	0.03	ug/L	8080
BHC, beta isomer	04.06.93	9381	0	0.04	ug/L	8080
BHC, delta isomer	04.06.93	9381	0	0.04	ug/L	8080
BHC, gamma isomer (Lindane)	04.06.93	9381	0	0.04	ug/L	8080
Decachlorobiphenyl Reported	04.06.93	9381	0.500	NA	ug/L	8080
Decachlorobiphenyl Theoretical	04.06.93	9381	0.500	NA	ug/L	8080
Tetrachloro-meta-xylene Rpt.	04.06.93	9381	0.413	NA	ug/L	8080
Tetrachloro-meta-xylene Theor.	04.06.93	9381	0.500	NA	ug/L	8080
EPA 8240 - Vol. Pri. Poll.						
Date Analyzed	04.06.93	93073	4/06/93	NA	Date	8240.DM
1,1,1-Trichloroethane	04.06.93	93073	0	1	ug/L	8240.DM
1,1,2,2-Tetrachloroethane	04.06.93	93073	0	0.5	ug/L	8240.DM
1,1,2-Trichloroethane	04.06.93	93073	0	0.5	ug/L	8240.DM
1,1-Dichloroethane	04.06.93	93073	0	1	ug/L	8240.DM
1,1-Dichloroethene	04.06.93	93073	0	0.5	ug/L	8240.DM
1,2-Dichloroethane	04.06.93	93073	0	0.5	ug/L	8240.DM
1,2-Dichlorobenzene	04.06.93	93073	0	1	ug/L	8240.DM
1,2-Dichloropropane	04.06.93	93073	0	0.5	ug/L	8240.DM

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1,3-Dichlorobenzene	04.06.93	93073	0	1	ug/L	8240.DM
1,4-Dichlorobenzene	04.06.93	93073	0	1	ug/L	8240.DM
2-Chloroethylvinylether	04.06.93	93073	0	1	ug/L	8240.DM
2-Hexanone	04.06.93	93073	0	5	ug/L	8240.DM
Acetone	04.06.93	93073	0	10	ug/L	8240.DM
Bromodichloromethane	04.06.93	93073	0	0.5	ug/L	8240.DM
Bromomethane	04.06.93	93073	0	1	ug/L	8240.DM
Benzene	04.06.93	93073	0	0.5	ug/L	8240.DM
Bromoform	04.06.93	93073	0	1	ug/L	8240.DM
Chlorobenzene	04.06.93	93073	0	1	ug/L	8240.DM
Carbon Tetrachloride	04.06.93	93073	0	0.5	ug/L	8240.DM
Chloroethane	04.06.93	93073	0	1	ug/L	8240.DM
Chloroform	04.06.93	93073	0	0.5	ug/L	8240.DM
Chloromethane	04.06.93	93073	0	1	ug/L	8240.DM
Carbon Disulfide	04.06.93	93073	0	2	ug/L	8240.DM
Dibromochloromethane	04.06.93	93073	0	1	ug/L	8240.DM
Ethylbenzene	04.06.93	93073	0	1	ug/L	8240.DM
Methyl ethyl ketone	04.06.93	93073	0	5	ug/L	8240.DM
Methyl isobutyl ketone	04.06.93	93073	0	3	ug/L	8240.DM
Methylene chloride	04.06.93	93073	0	1	ug/L	8240.DM
Styrene	04.06.93	93073	0	1	ug/L	8240.DM
Trichloroethene	04.06.93	93073	0	1	ug/L	8240.DM
Trichlorofluoromethane	04.06.93	93073	0	1	ug/L	8240.DM
Toluene	04.06.93	93073	0	1	ug/L	8240.DM
Tetrachloroethene	04.06.93	93073	0	1	ug/L	8240.DM
Vinyl acetate	04.06.93	93073	0	2	ug/L	8240.DM
Vinyl chloride	04.06.93	93073	0	0.5	ug/L	8240.DM
Total Xylene Isomers	04.06.93	93073	0	1	ug/L	8240.DM
cis-1,2-Dichloroethene	04.06.93	93073	0	1	ug/L	8240.DM
cis-1,3-Dichloropropene	04.06.93	93073	0	0.5	ug/L	8240.DM
trans-1,2-Dichloroethene	04.06.93	93073	0	1	ug/L	8240.DM
trans-1,3-Dichloropropene	04.06.93	93073	0	1	ug/L	8240.DM
1,2-Dichloroethane-d4 Reported	04.06.93	93073	43.9	NA	ug/L	8240.DM
1,2-Dichloroethane-d4 Theo.	04.06.93	93073	50.0	NA	ug/L	8240.DM
4-Bromofluorobenzene Reported	04.06.93	93073	54.9	NA	ug/L	8240.DM
4-Bromofluorobenzene Theo.	04.06.93	93073	50.0	NA	ug/L	8240.DM
Toluene-d8 Reported	04.06.93	93073	50.0	NA	ug/L	8240.DM

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Toluene-d8 Theo.	04.06.93	93073	50.0	NA	ug/L	8240.DM
Arsenic (7060)	04.07.93	93435	0	0.002	mg/L	7060
Antimony (6010)	04.05.93	93429	0	0.06	mg/L	6010
Barium (6010)	04.05.93	93429	0	0.007	mg/L	6010
Beryllium (6010)	04.05.93	93429	0	0.002	mg/L	6010
Cadmium (7131)	04.08.93	93435	0	0.0001	mg/L	7131
Chromium (7191)	04.08.93	93435	0	0.0005	mg/L	7191
Cobalt (6010)	04.05.93	93429	0	0.04	mg/L	6010
Lead (7421)	04.07.93	93435	0	0.002	mg/L	7421
Mercury (EPA 7470)	04.08.93	93433	0	0.0002	mg/L	7470
Molybdenum (6010)	04.05.93	93429	0	0.04	mg/L	6010
Nickel (6010)	04.05.93	93429	0	0.04	mg/L	6010
Selenium (7740)	04.07.93	93435	0	0.004	mg/L	7740
Silver (6010)	04.05.93	93429	0	0.01	mg/L	6010
Silver (6010)	04.05.93	93429	0	0.01	mg/L	6010
Thallium (6010)	04.05.93	93429	0	0.4	mg/L	6010
Vanadium (6010)	04.05.93	93429	0	0.04	mg/L	6010
Halocarbons/EPA 8010						
Date Analyzed	04.15.93	93079	4/15/93	NA	Date	8010
1,1,1-Trichloroethane	04.15.93	93079	0	0.5	ug/L	8010
1,1,2,2-Tetrachloroethane	04.15.93	93079	0	0.5	ug/L	8010
1,1,2-Trichloroethane	04.15.93	93079	0	0.5	ug/L	8010
1,1-Dichloroethane	04.15.93	93079	0	0.5	ug/L	8010
1,1-Dichloroethene	04.15.93	93079	0	0.5	ug/L	8010
1,2-Dichloroethane	04.15.93	93079	0	0.5	ug/L	8010
1,2-Dichlorobenzene	04.15.93	93079	0	0.5	ug/L	8010
1,2-Dichloropropane	04.15.93	93079	0	0.5	ug/L	8010
1,3-Dichlorobenzene	04.15.93	93079	0	0.5	ug/L	8010
1,4-Dichlorobenzene	04.15.93	93079	0	0.5	ug/L	8010
2-Chloroethylvinylether	04.15.93	93079	0	0.5	ug/L	8010
Bromodichloromethane	04.15.93	93079	0	0.5	ug/L	8010
Bromomethane	04.15.93	93079	0	0.5	ug/L	8010
Bromoform	04.15.93	93079	0	0.5	ug/L	8010
Chlorobenzene	04.15.93	93079	0	0.5	ug/L	8010
Carbon Tetrachloride	04.15.93	93079	0	0.5	ug/L	8010
Chloroethane	04.15.93	93079	0	0.5	ug/L	8010
Chloroform	04.15.93	93079	0	0.5	ug/L	8010

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9304025

DATE REPORTED : 04/20/93

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Chloromethane	04.15.93	93079	0	0.5	ug/L	8010
Dibromochloromethane	04.15.93	93079	0	0.5	ug/L	8010
Dichlorodifluoromethane	04.15.93	93079	0	3	ug/L	8010
Freon 113	04.15.93	93079	0	1	ug/L	8010
Methylene chloride	04.15.93	93079	0	0.5	ug/L	8010
Trichloroethene	04.15.93	93079	0	0.5	ug/L	8010
Trichlorofluoromethane	04.15.93	93079	0	0.5	ug/L	8010
Tetrachloroethene	04.15.93	93079	0	0.5	ug/L	8010
Vinyl chloride	04.15.93	93079	0	0.5	ug/L	8010
cis-1,2-Dichloroethene	04.15.93	93079	0.21	0.5	ug/L	8010
cis-1,3-Dichloropropene	04.15.93	93079	0	0.5	ug/L	8010
trans-1,2-Dichloroethene	04.15.93	93079	0	0.5	ug/L	8010
trans-1,3-Dichloropropene	04.15.93	93079	0	0.5	ug/L	8010

CHAIN OF CUSTODY RECORD

BCA Log Number 13-UT-005

Client name: Law/Crandall, Inc.	Project or PO#: 2702.20396
Address: 200 N. Citadel Dr.	Phone #: (213) 889-5300
City, State, Zip: Los Angeles CA 90040	Report attention: B.D'Braitis

Lab Sample number	Date sampled	Time sampled	Type* (See key below)	Sampled by: Martine Alter Sample description	Number of containers	606	Dioxin-Screen	625 + 624	POH + COD	GM + N. Metals	Cyanide	Hazardous sample #/SLD Special handling required	Remarks
	4-2-93	10:00	GW	4928B	13	X	X	X	X	X	X	X		Run 624 first.
	4-2-93	1:00	GW	4928A	13	X	X	X	X	X	X	X		If ND please
	4-2-93	—	BW	Trip Blank* 30401	2								X	run for 601/602
														to get lower DL's
														CSM 4-2-93

	Signature	Print Name	Company	Date	Time
Relinquished by	Martine Alter	Martine Alter	Law/Crandall, Inc.	4-2-93	1:99
Received by	Jin Wong	LOK I WONG	BCA	4/2/93	1:50?
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacific Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

004236

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1993 ANNUAL REPORT

GROUNDWATER MONITORING

STRATHERN LANDFILL

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared for

Los Angeles By-Products Company

January 31, 1994

Law/Crandall Project No. 2702.20346.0001

LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ONE OF THE LAW COMPANIES

004227

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LAW/CRANDALL, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES

January 31, 1994

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058-1195

Project No. 2702.20346.0001
RWQCB CI No. 7055

Attention: Mr. Mike McAllister

1993 ANNUAL REPORT GROUNDWATER MONITORING

Strathern Landfill
Sun Valley District
Los Angeles, California

INTRODUCTORY SUMMARY

This report is a summary of the 1993 groundwater monitoring activities at the Los Angeles By-Product Company's Strathern Landfill. Law/Crandall, Inc., monitors the groundwater levels and groundwater quality at Strathern Landfill. Groundwater levels at the monitoring wells rose in 1993 in response to recharge operations at the Hansen Spreading Grounds. Groundwater quality meets California Drinking Water Standards for the parameters measured, except for iron and manganese in well 4928B.

SCOPE AND LIMITATIONS

Law/Crandall, Inc. measures groundwater levels, collects groundwater samples, analyzes the laboratory results and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region under Monitoring and Reporting Program (MRP) No. 7055.

200 CITADEL DRIVE • LOS ANGELES, CA 90040
(213) 889-5300 • FAX (213) 721-6700

ONE OF THE LAW COMPANIES

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Law/Crandall, Inc., prepared this report for Los Angeles By-Products Company's specific needs. The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data including a description of the site, the monitoring requirements, and the groundwater monitoring well network.

Site Description

Los Angeles By-Products Company operates the Strathern Landfill located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

Monitoring Requirements

The landfill, located in Sun Valley, California, received a permit to operate from the Solid Waste Management Committee on July 31, 1992, and opened on September 21, 1992. Monitoring is done to satisfy the requirements of Waste Discharge Requirement (WDR) Order No. 91-086, and Monitoring and Reporting Program (MRP) No. 7055, adopted by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region on December 2, 1991. The MRP requires quarterly reporting on groundwater quality. This report contains an annual summary and covers the fourth quarter 1993 monitoring

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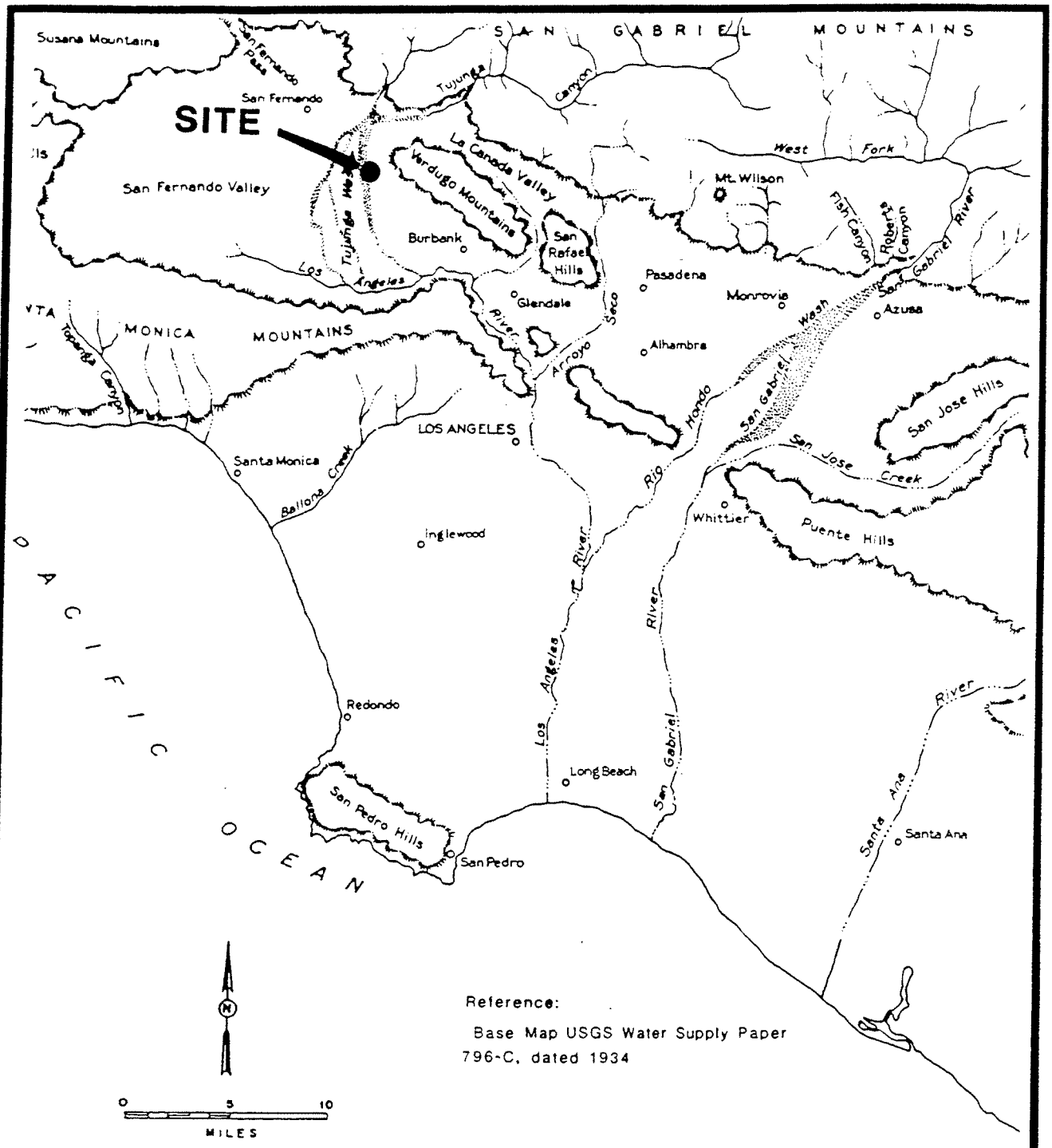

SITE LOCATION MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

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requirement. Law/Crandall, Inc., collected quarterly groundwater samples in 1993 and prepared this report. BC Analytical Laboratories performed the chemical analyses. BC Analytical is certified for such analyses by the State Department of Health Services.

Monitoring Well Network

The groundwater monitoring well network for the site consists of two wells. Monitoring consists of measuring groundwater levels and collecting groundwater samples. Figure 2 shows the monitoring well locations. Table 1 presents monitoring well construction details.

TABLE 1

MONITORING WELL CONSTRUCTION DETAILS

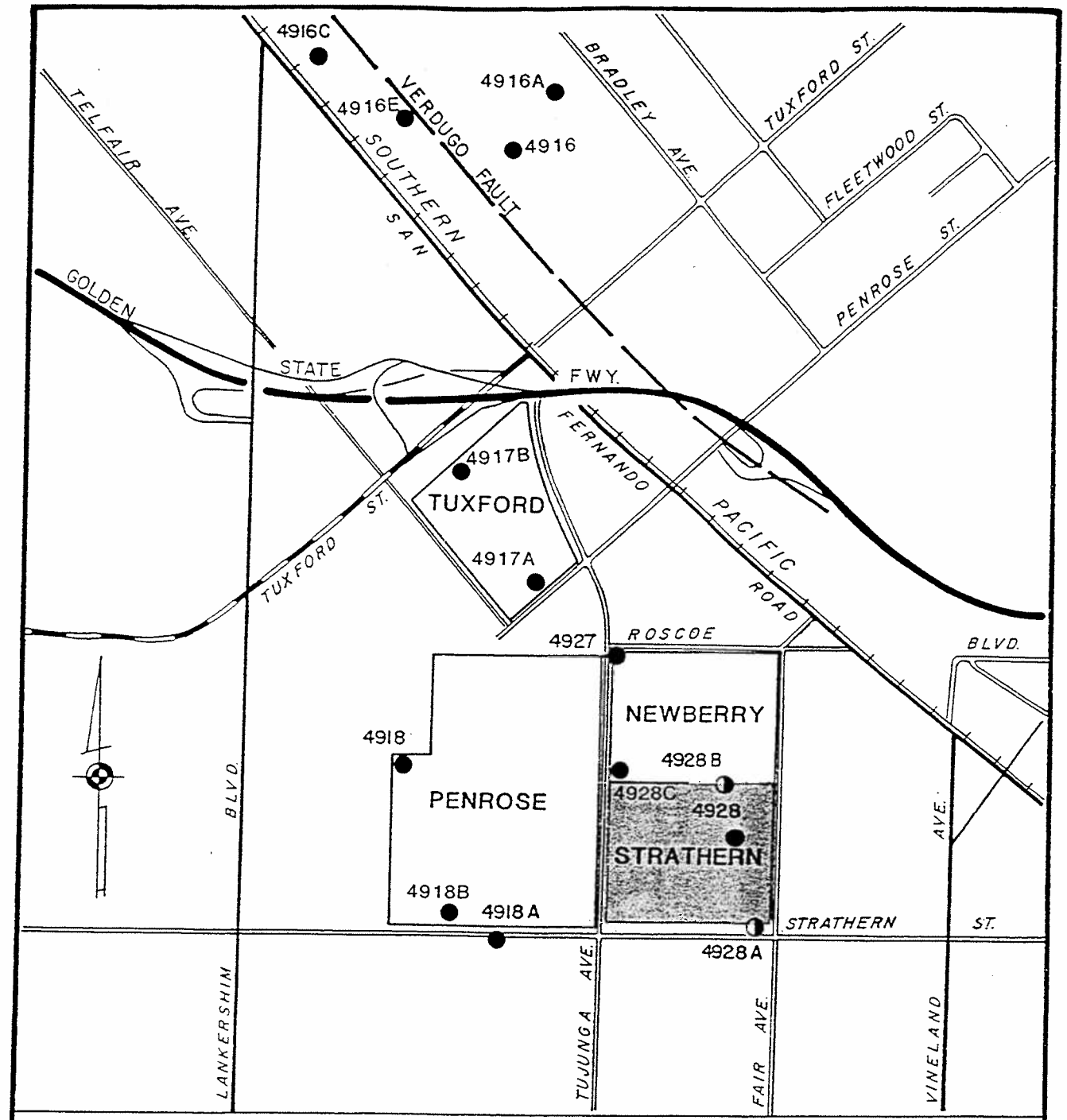
WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362

RESULTS

This section presents the 1993 monitoring results, including groundwater levels and groundwater quality.

Groundwater Levels

Law/Crandall measured groundwater levels quarterly during 1993. In response to heavy groundwater recharge operations at the Hansen Spreading grounds, groundwater levels rose about 35 feet in the monitoring wells this year. The groundwater database in Appendix A contains the water level data. We contoured the groundwater levels quarterly. Appendix B contains these contour maps. Appendix C contains the hydrograph for the two wells.



EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:
BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000
SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 2

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Groundwater Quality

We collected groundwater samples in April, June, August, and November 1993. Laboratory analyses indicate that the groundwater meets California Drinking Water Standards for the parameters measured, except for iron and manganese in well 4928B. Trace amounts of tetrachloroethylene (PCE) were detected in wells 4928A and 4928B, but were below drinking water limits. Table 2 compares groundwater quality for the fourth quarter of 1993 with California Drinking Water Standards. Table 3 compares cumulative groundwater quality for 1993 with California Drinking Water Standards.

TABLE 2

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
Fourth Quarter 1993 Data

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE	
		4928A	4928B
Inorganic	(ppm)		
Total Dissolved Solids (TDS)	500	350	400
Chloride (Cl)	250	19	20
Sulfate (SO_4)	250	47	120
Nitrate (NO_3)	45	7.7	2.7
Iron (Fe)	0.3	0.13	82
Manganese (Mn)	0.05	<0.01	3.8
Zinc (Zn)	5	0.21	3.0
Organic	(ppb)		
Trichloroethylene (TCE)	5	<0.5	<0.5
Tetrachloroethylene (PCE)	5	0.9	1.4
1,2-dichloroethane (1,2-DCA)	0.5	<0.5	<0.5
1,1-dichloroethene (1,1-DCE)	6	<0.5	<0.5
Carbon tetrachloride (CCl_4)	0.5	<0.5	<0.5

* Source: CCR, Title 22, Division 4, Chapter 15

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TABLE 3

SITE WATER QUALITY VS. CALIFORNIA DRINKING WATER STANDARDS
1993 Cumulative Data

CONSTITUENT	RECOMMENDED MAXIMUM CONTAMINANT LEVEL*	WATER SOURCE							
		4928A				4928B			
		APR	JUN	AUG	NOV	APR	JUN	AUG	NOV
Inorganic	(ppm)								
Total Dissolved Solids (TDS)	500	330	370	340	350	190	410	390	400
Chloride (Cl)	250	18	18	17	19	19	22	17	20
Sulfate (SO_4)	250	35	48	48	47	24	46	46	120
Nitrate (NO_3)	45	8.0	8.3	8.2	7.7	<0.2	0.78	3.4	2.7
Iron (Fe)	0.3	0.20	0.12	0.17	0.13	0.82	14	17	82
Manganese (Mn)	0.05	<0.01	<0.01	<0.01	<0.01	0.06	0.53	0.90	3.8
Zinc (Zn)	5	0.37	0.25	0.25	0.21	3.5	3.7	4.6	3.0
Organic	(ppb)								
Trichloroethylene (TCE)	5	<0.5	<1	<1	<0.5	0.90	<1	<1	<0.5
Tetrachloroethylene (PCE)	5	1.6	1.4	1.5	0.9	<0.5	1.7	2.0	1.4
1,2-dichloroethane (1,2-DCA)	0.5	<0.5	<1	<1	<0.5	<0.5	<1	<1	<0.5
1,1-dichloroethene (1,1-DCE)	6	<0.5	<1	<1	<0.5	<0.5	<1	<1	<0.5
Carbon tetrachloride (CCl_4)	0.5	<0.5	<1	<1	<0.5	<0.5	<1	<1	<0.5

* Source: CCR, Title 22, Division 4, Chapter 15

Appendix D contains the groundwater sampling protocol. The groundwater database in Appendix A contains water level measurements and a summary of field and laboratory analyses, as well as analyses done during previous years. Appendix E contains water quality history and statistical distribution graphs that show the range of concentrations for selected parameters. Appendix F contains analytical results from BC Analytical Laboratories of groundwater samples collected in 1993. Appendix F also contains the chain-of-custody records.

CONCLUSIONS

Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Law/Crandall, Inc., will continue to measure groundwater levels at Strathern Landfill. Water levels continued to rise due to the heavy recharge activities at Hansen Spreading

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Grounds located 2.1 miles to the north-northeast. Based on the laboratory data, waste disposal activities do not appear to be adversely affecting local groundwater quality. Law/Crandall, Inc., will continue to monitor the site quarterly. No recommendations are warranted based on the 1993 data.

We appreciate working with you on this project. If you have any questions regarding this report, please contact Bill O'Braitis at (213) 889-5300.

Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis
Project Geologist

Alice Campbell, C.E.G. 1157
Principal Hydrogeologist

WJO:ks
\REPORT\DEPT-702\93-GWM\20346A93.RPT

Attachments

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CERTIFICATION AND DECLARATION

I certify under penalty of law that the information submitted in this document and all attachments is true, accurate, and complete.

Executed the 1st day of FEBRUARY 1994, at Los Angeles, California

LOS ANGELES BY-PRODUCTS COMPANY

Mike McAllister
Vice President

APPENDIX A

GROUNDWATER DATABASE

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

			WATER LEV (ft.)		FIELD MEASUREMENTS (ppm)				LABORATORY ANALYSES								GENERAL MINERAL(ppm)							
POINT	DATE	REF PT.	W S E	pH	T(f)	TIC	CO2	Alk	EC	bpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	COD	TOC	TOI
WELL 4928A	03-May-84	803.78								7.2	120	28	48	6.0	0.0	363	75	65	15.0		0.35	650			
WELL 4928A	31-Dec-84	803.78							560	7.7	73	16	26	4.2	0.0	280	58	7	12.0			351			
WELL 4928A	19-Jun-85	803.78	549.22	7.1	69	1160	89.0	506	1300	7.0	130	36	90	9.0	0.0	490	46	87	16.0			750	<0.05	8.0	
WELL 4928A	17-Jul-85	803.78	547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93	8.6	0.0	620	59	98	8.9			730	0.06	7.5	
WELL 4928A	14-Aug-85	803.78	546.41	6.8	74	1250	22.5		1400	7.6	230	33	79	11.0	0.0	610	44	110	<0.	0.8	0.25	790	<0.05	120.0	
WELL 4928A	19-Sep-85	803.78	543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78	6.0	0.0	670	55	81	25.0			830	<0.05	14.0	
WELL 4928A	16-Jan-86	803.78	538.51	7.0	66	1400		180	1400	7.0	160	40	91	8.6	0.0	620	26	150	5.4			880	<0.05	20.0	
WELL 4928A	29-Apr-86	803.78	539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63	7.6	0.0	488	27	75	<4			580		29.0	
WELL 4928A	22-Jul-86	803.78	541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80	8.0	0.0	390	37	260	8.6			780	0.11	5.0	
WELL 4928A	15-Oct-86	803.78	539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84	3.8	0.0	490	55	130	12.0	0.6	0.30	810	<0.05	3.0	
WELL 4928A	14-Jan-87	803.78	538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82	7.6	0.0	590	54	120	12.0	0.8	0.30	820	<0.05	10.0	
WELL 4928A	15-Apr-87	803.78	536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85	6.6	<0.6		650	62	130	16.4	0.8	0.30	910	<0.05	18.0	
WELL 4928A	24-Jul-87	803.10	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110	8.4	<0.6		630	58	140	13.0			840	<0.05	20.0	
WELL 4928A	21-Oct-87	803.10	526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82	8.5	<0.6		590	56	83	19.0	0.63	0.30	760	<0.05	17.0	
WELL 4928A	29-Apr-88	803.10	518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63	6.4	<0.6		480	61	50	23.0	0.3	0.34	600	11.0		0.12
WELL 4928A	28-Jul-88	803.10	518.82	7.4	67.1	450	37.0	385	900	7.4	99	24	51	5.6	<0.6		442	51	36	19.0	0.34	0.30	550	10.0		<0.08
WELL 4928A	08-Nov-88	803.10	511.81	7.2	65	700	32.0	350	760	7.2	91	26	49	5.6	<0.6		370	56	23	12.0	0.22	0.20	450	<3		<0.08
WELL 4928A	07-Feb-89	803.78	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35	4.5	<0.6		350	51	21	16.0	0.05	0.30	440	<5		0.18
WELL 4928A	06-Oct-92		480.78																						
WELL 4928A	19-Oct-92		480.78																						
WELL 4928A	15-Jan-93		480.78																						
WELL 4928A	02-Apr-93		489.42	7.9	67	350	37	264	590	7.6	72	17	29	4.6	<0.6	320	35	18	8		0.43	330	<6		
WELL 4928A	22-Jun-93		500.59	7.8	66	440	25	252	610	7.5	72	18	29	4.5	<0.6	290	48	18	8.3		0.49	370	7.7		
WELL 4928A	24-Aug-93		509.08	NA	67	550	25	244	610	7.1	73	18	30	4.6	<0.6	290	48	17	8.2		0.47	340	<6		
WELL 4928A	19-Nov-93		515.15	7.40	66	500	22	248	600	7.4	69	17	29	4.5	<0.6	290	47	19	7.7		0.64		<6		
WELL 4928B	23-Oct-84	823.10							1000	7.1	110	20	100	5.4	0.0	470	60	40	19.0			620			
WELL 4928B	19-Jun-85	823.10	552.73	8.4	70	900	66.0	392	870	7.1	82	24	92	6.3	0.0	450	53	38	39.0			560	<0.05	4.0	
WELL 4928B	17-Jul-85	823.10	551.71	6.8	74	800	60.0	310	900	6.9	82	24	84	6.2	0.0	450	68	40	20.0			520	0.06	6.1	
WELL 4928B	14-Aug-85	823.10	550.29	7.2	72	850	13.0		860	7.8	120	20	65	7.2	0.0	390	56	37	12.0	0.4	0.32	530	<0.05	<3	
WELL 4928B	19-Sep-85	823.10	547.87	6.5	70	740	30.5	350	820	6.9	130	23	49	3.3	0.0	380	61	33	36.0			510	<0.05	<3	
WELL 4928B	16-Jan-86	823.10	541.82	7.2	68	750		321	750	7.2	107	22	36	4.4	0.0	340	28	25	26.0			460	<0.05	<3	
WELL 4928B	29-Apr-86	823.10	542.86	6.7	71	520	18.0	255	600	8.0	120	17	30	5.2	0.0	341	30	20	7.0			320		<3	
WELL 4928B	22-Jul-86	823.10	545.14	7.3	70	620	30.0	270	700	7.4	110	20	37	4.4	0.9	290	29	22	6.9			420	0.12	6.0	
WELL 4928B	15-Oct-86	823.10	543.10	6.0	68	690	33.5	255	680	7.6	87	10	29	4.2	0.0	280	60	35	15.0	0.3	0.30	440	<0.05	<3	
WELL 4928B	14-Jan-87	823.10	541.32	6.7	66	500	16.5	240	700	7.3	88	21	35	4.2	0.0	340	51	18	5.3	0.5	0.40	420	0.10	<3	
WELL 4928B	15-Apr-87	823.10	539.63	6.2	65	450	25.0	250	680	7.0	80	22	33	4.0	<0.6		340	54	18	6.6	0.4	0.40	410	0.08	11.0	
WELL 4928B	24-Jul-87	823.10	535.48	6.8	70	550	8.0	290	720	7.4	87	25	36	4.3	<0.6		350	50	24	6.8			430	<0.05	<3	
WELL 4928B	21-Oct-87	823.10	529.40	6.9	66	465	65.0	291	740	7.9	90	22	35	5.0	<0.6		370	50	21	6.4	0.25	0.40	430	<0.05	<3	
WELL 4928B	29-Apr-88	823.17	523.37	8.6	66.2	455	25.0	260	710	7.8	82	31	31	4.2	<0.6		356	52	20	2.9	0.18	0.40	400	7.0		<0.08
WELL 4928B	28-Jul-88	823.17	521.77	7.4	68.0	335	25.0	336	680	7.5	85	20	30	3.9	<0.6		350	48	18	2.4	0.19	0.40	410	6.0		<0.08
WELL 4928B	08-Nov-88	823.17	515.47	7.3	66	680	20.0	400	740	7.2	83	25	51	4.7	<0.6		380	53	18	3.2	0.16	0.30	430	<3		<0.08
WELL 4928B	07-Feb-89	823.17	511.00	6.6	66	670	23.0	372	680	7.3	85	24	36	4.6	<0.6		350	56	17	3.9	<0.02	0.40	400	<5		0.24
WELL 4928B	06-Oct-92	823.09	483.09																						
WELL 4928B	19-Oct-92		483.09																						
WELL 4928B	15-Jan-93		482.09																						
WELL 4928B	02-Apr-93		498.82	7.7	82	240	7	196	410	8.1	26	19	34	4.7	<0.6	230	24	19	<0.2		0.28	190	<6		
WELL 4928B	22-Jun-93		502.46	7.6	69	500	45	300	690	7.0	70	26	39	6.2	<0.6	370	46	22	0.78		0.25	410	7.2		
WELL 4928B	24-Aug-93		511.79	NA	68	600	50	286	680	6.5	82	22	32	5.0	<0.6	370	46	17	3.4		0.38	390	<6		
WELL 4928B	19-Nov-93		517.50	7.6	67	550	33	320	690	7.1	93	25	37	5.5	<0.6	370	120	20	2.7		0.36	400	<6		

JOB _____ DATE _____ DR. _____ O.E. _____ CHKD. _____

FORM 120

LAW/CRANDALL, INC.

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STRATHERN LANDFILL
GROUND WATER DATABASE

PROJECT NO. 2702.20346.0001

POINT	DATE	ORGANICS (ppb) TCE	PCE	1,2DCA	1,1DCE	CCl4	TRACE ELEMENTS (ppm) Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURCE
WELL 4928A	03-May-84		1	8.8			0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
WELL 4928A	31-Dec-84	44	5.3								<0.09	0.220		<0.04				<0.015	B&C
WELL 4928A	19-Jun-85	<1	1	3							<0.086	<0.09		0.290				0.670	B&C
WELL 4928A	17-Jul-85	<1	1	2							<0.09	0.060		0.240				0.600	B&C
WELL 4928A	14-Aug-85										<0.08	<0.046		0.230				0.600	B&C
WELL 4928A	19-Sep-85	37	2	2							<0.035	<0.042		0.260				0.800	B&C
WELL 4928A	16-Jan-86	<1	1	2							<0.033	<0.063		0.390				0.650	B&C
WELL 4928A	29-Apr-86	<1	<1	<1							<0.02	<0.2		0.320				0.700	B&C
WELL 4928A	22-Jul-86	<1	2	<1							<0.02	<0.2		0.400				0.490	B&C
WELL 4928A	15-Oct-86	<1	3	1				<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
WELL 4928A	14-Jan-87	<1	<1	<1				<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
WELL 4928A	15-Apr-87	<1	<1	<1				<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
WELL 4928A	24-Jul-87	<1	2	1				<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
WELL 4928A	21-Oct-87	<1	2	<1				<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
WELL 4928A	29-Apr-88	<1	<1	<1	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
WELL 4928A	28-Jul-88	<1	1	1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
WELL 4928A	08-Nov-88	<1	<1	1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
WELL 4928A	07-Feb-89	<1	2	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
WELL 4928A	06-Oct-92																		
WELL 4928A	19-Oct-92																		
WELL 4928A	15-Jan-93																		
WELL 4928A	02-Apr-93	<0.5	1.6	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	<0.001	<0.02	0.20	<0.0002	<0.01	0.005	<0.04	<0.004	0.37	B&C
WELL 4928A	22-Jun-93	<1	1.4	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.12	<0.0002	<0.01	0.003	<0.04	<0.004	0.25	B&C
WELL 4928A	24-Aug-93	<1	1.3	<1	<1	<1	<0.1	<0.01	<0.002	<0.001	<0.02	0.17	<0.0002	<0.01	0.004	<0.04	<0.004	0.25	B&C
WELL 4928A	19-Nov-93	<0.5	0.9	<0.5	<0.5	<0.5	<0.1			<0.001	<0.02	0.13		<0.01	0.003	<0.04		0.21	B&C
WELL 4928B	23-Oct-84		4								<0.06	<0.08		2.200				0.082	B&C
WELL 4928B	19-Jun-85	<1	<1	<1							<0.086	<0.09		2.270				0.077	B&C
WELL 4928B	17-Jul-85	<1	<1	3							<0.09	<0.06		2.400				0.081	B&C
WELL 4928B	14-Aug-85										<0.08	<0.046		2.500				0.050	B&C
WELL 4928B	19-Sep-85	<1	3	<1							<0.035	<0.042		2.400				0.067	B&C
WELL 4928B	16-Jan-86	<1	<1	<1							<0.033	<0.063		1.700				0.051	B&C
WELL 4928B	29-Apr-86	<1	1	<1							<0.02	<0.2		1.300				0.070	B&C
WELL 4928B	22-Jul-86	<1	3	<1							<0.02	<0.2		1.100				0.050	B&C
WELL 4928B	15-Oct-86	<1	<1					<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
WELL 4928B	14-Jan-87	<1	2	<1				<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
WELL 4928B	15-Apr-87	<1	2	<1				<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	24-Jul-87	<1	4	1				<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.04	B&C
WELL 4928B	21-Oct-87	<1	<1	<1				<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.03	B&C
WELL 4928B	29-Apr-88	<1	3	<1	<1	<1	0.2	<0.02	<0.002	<0.02	<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.58	B&C
WELL 4928B	28-Jul-88	<1	4	<1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.17	B&C
WELL 4928B	08-Nov-88	<1	4	<1	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.08	B&C
WELL 4928B	07-Feb-89	1	5	<1	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.36	B&C
WELL 4928B	06-Oct-92																		
WELL 4928B	19-Oct-92																		
WELL 4928B	15-Jan-93																		
WELL 4928B	02-Apr-93	0.90	<0.5	<0.5	<0.5	<0.5	<0.1	<0.01	<0.002	0.005	<0.02	0.82	<0.0002	0.06	0.049	<0.04	<0.004	3.5	B&C
WELL 4928B	22-Jun-93	<1	1.7	<1	<1	<1	0.19	<0.01	<0.002	0.001	<0.02	14	<0.0002	0.53	0.024	<0.04	<0.004	3.7	B&C
WELL 4928B	24-Aug-93	<1	2.0	<1	<1	<1	0.28	<0.01	<0.002	<0.001	<0.02	17	<0.0002	0.40	0.018	<0.04	<0.004	4.6	B&C
WELL 4928B	19-Nov-93	<0.5	1.4	<0.5	<0.5	<0.5	1.10			<0.001	<0.02	82		3.80	0.003	<0.04		3.0	B&C

JOB ____ DATE ____ DR. ____ O.E. ____ CHKD ____

FORM 120

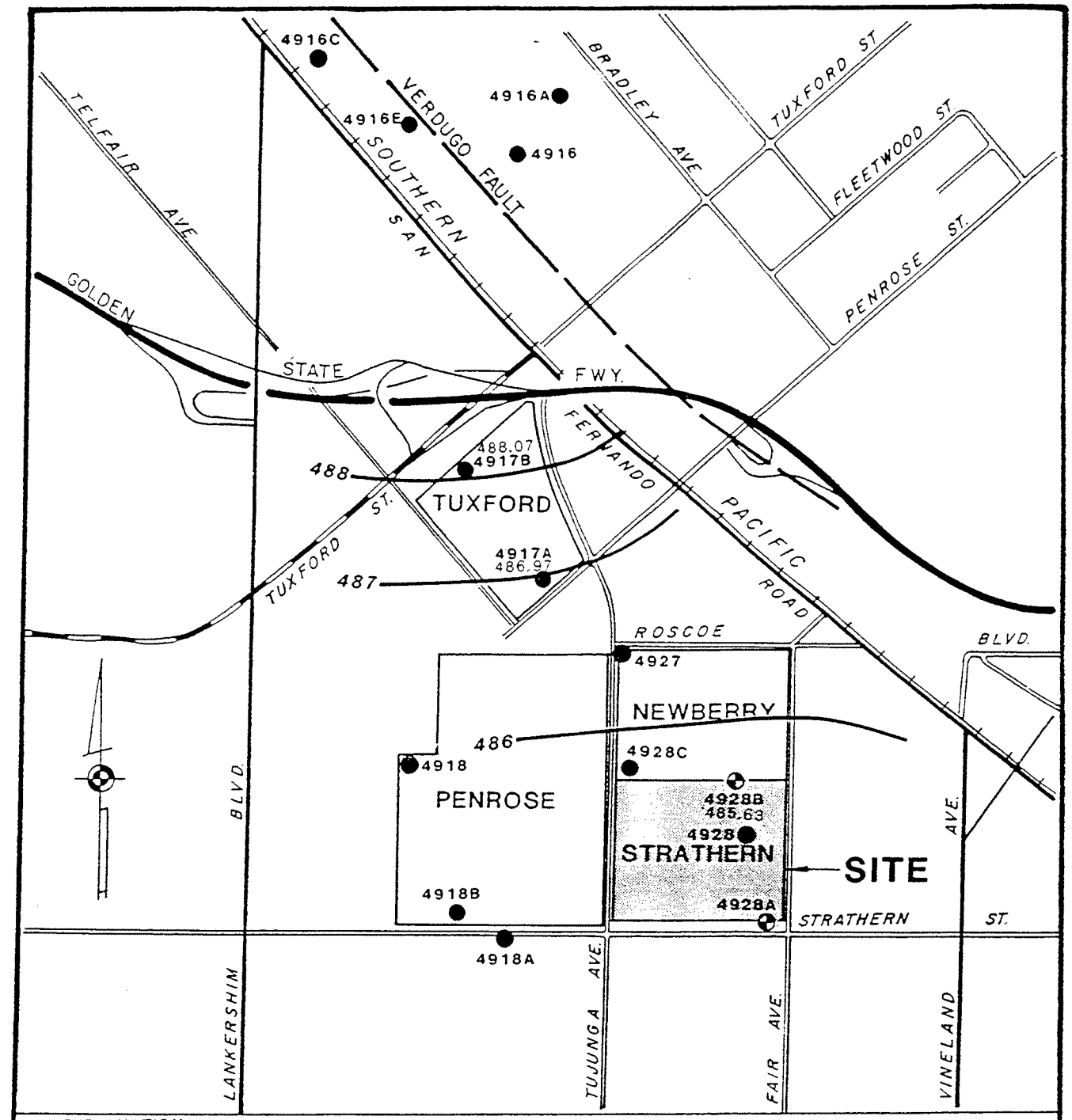
LAW/CRANDALL, INC.

PLATE 1

004239

APPENDIX B

GROUNDWATER CONTOUR MAPS



EXPLANATION

- 4928B ⊕ MONITORING WELL LOCATION AND NUMBER
- 4928C ● OTHER NEARBY MONITORING WELL
- 488.07 GROUND WATER SURFACE ELEVATION IN FEET ASL
- —488— LINES OF EQUAL GROUND WATER ELEVATION

REFERENCE:

BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000

SCALE IN FEET

FEBRUARY 1993

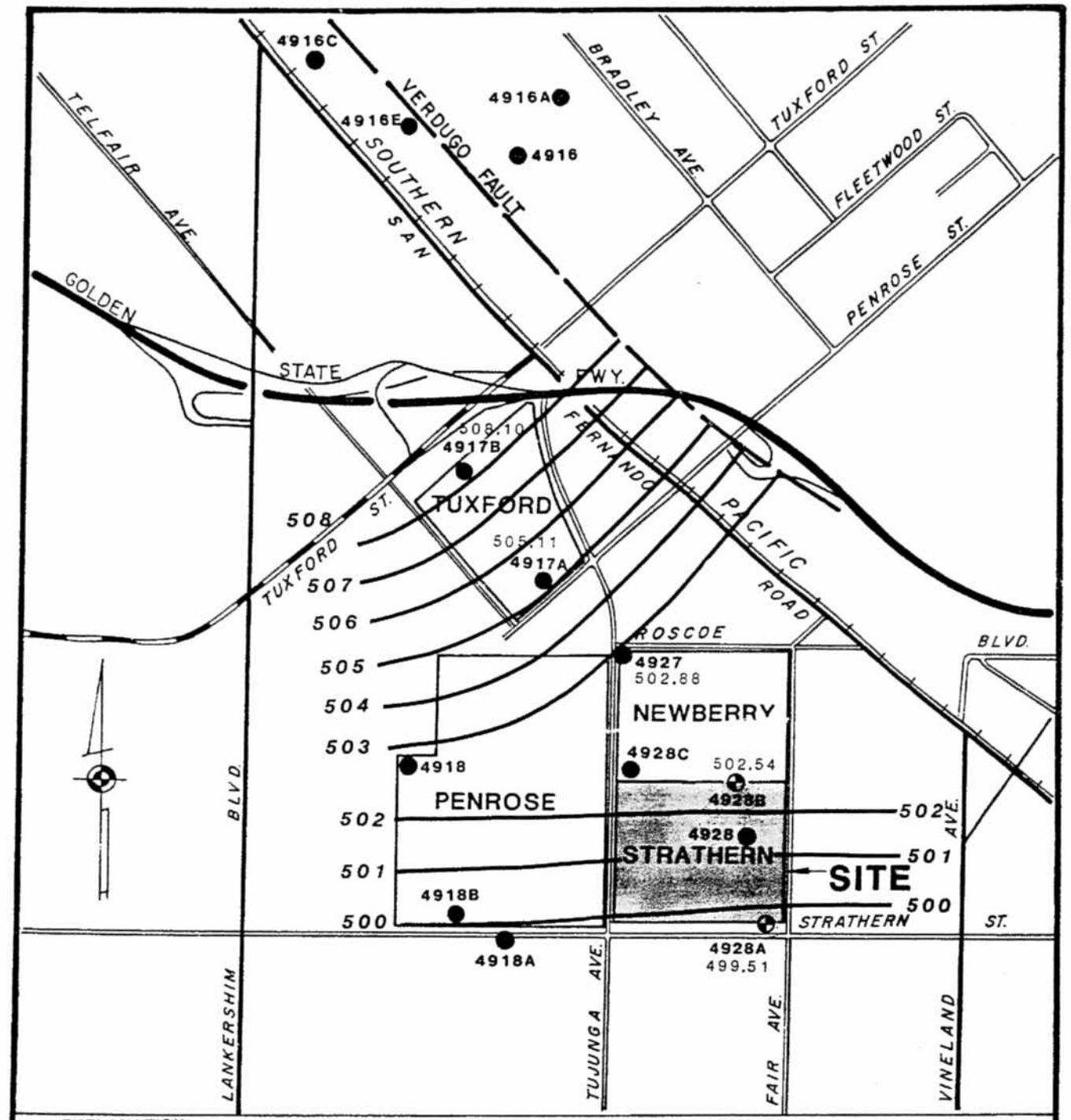
GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

004241



EXPLANATION

- 4928B ◒ MONITORING WELL LOCATION AND NUMBER
- 4928C ● OTHER NEARBY MONITORING WELL
- 488.07 GROUND WATER SURFACE ELEVATION IN FEET ASL.
- —488— LINES OF EQUAL GROUND WATER ELEVATION

REFERENCE:

BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000

SCALE IN FEET

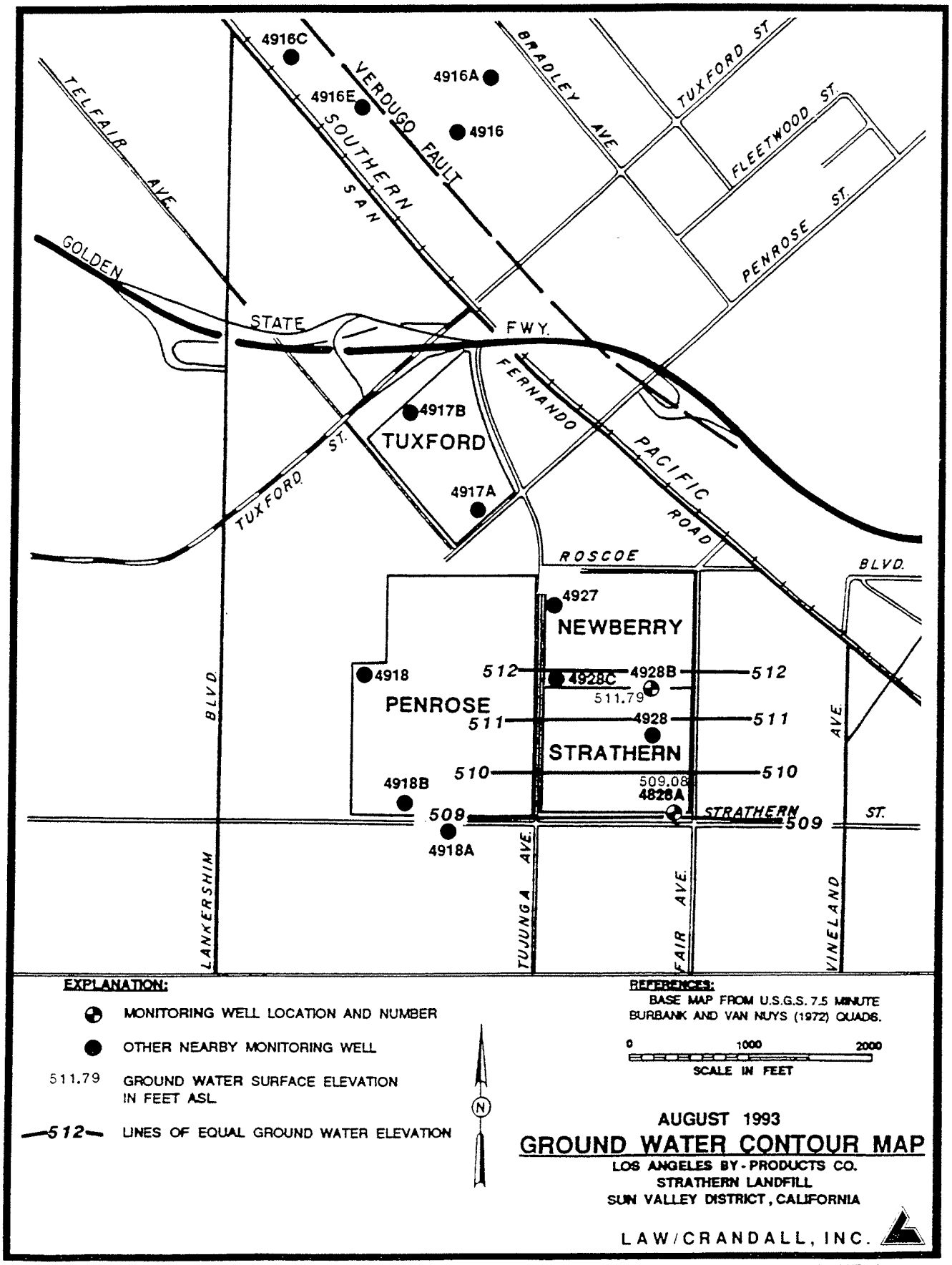
JUNE 1993

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

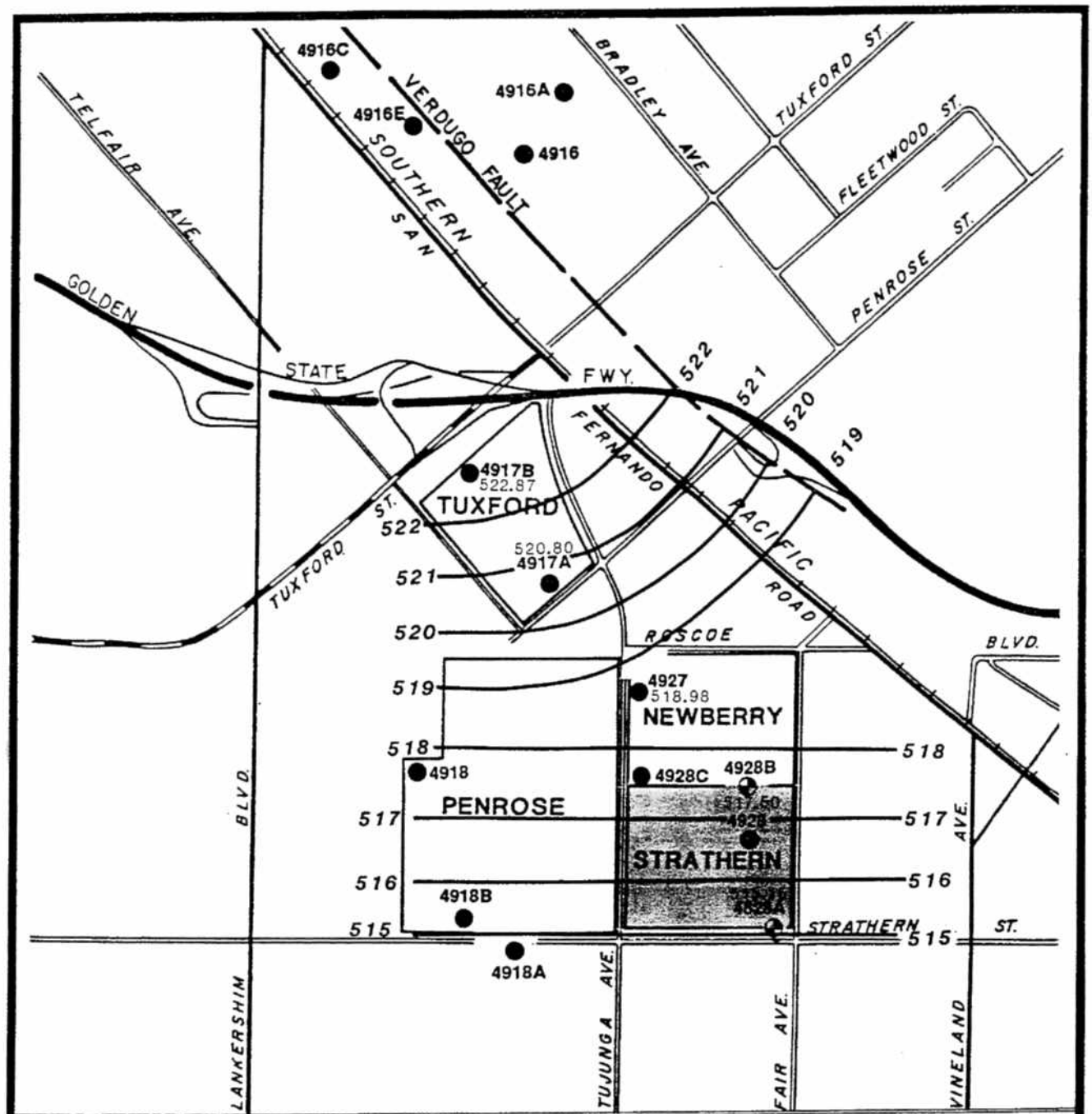


JOB 2702.20346.0001 DATE 9/7/93 DR. MV O.E. (JJ) CHKD.

FORM 120

FIGURE 1

004243



EXPLANATION:

- MONITORING WELL LOCATION AND NUMBER
- OTHER NEARBY MONITORING WELL
- 522.87 GROUND WATER SURFACE ELEVATION IN FEET ASL.
- 522 LINES OF EQUAL GROUND WATER ELEVATION

REFERENCES:
BASE MAP FROM U.S.G.S. 7.5 MINUTE BURBANK AND VAN NUYS (1972) QUADS.

0 1000 2000
SCALE IN FEET

N

NOVEMBER 1993

GROUND WATER CONTOUR MAP

LOS ANGELES BY-PRODUCTS CO.
STRATHERN LANDFILL
SUN VALLEY DISTRICT, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

JOB 2102.20346.0001 DATE 1-30-17 DR. MN O.E. WSO CHKD.

FORM 120

004244

APPENDIX C

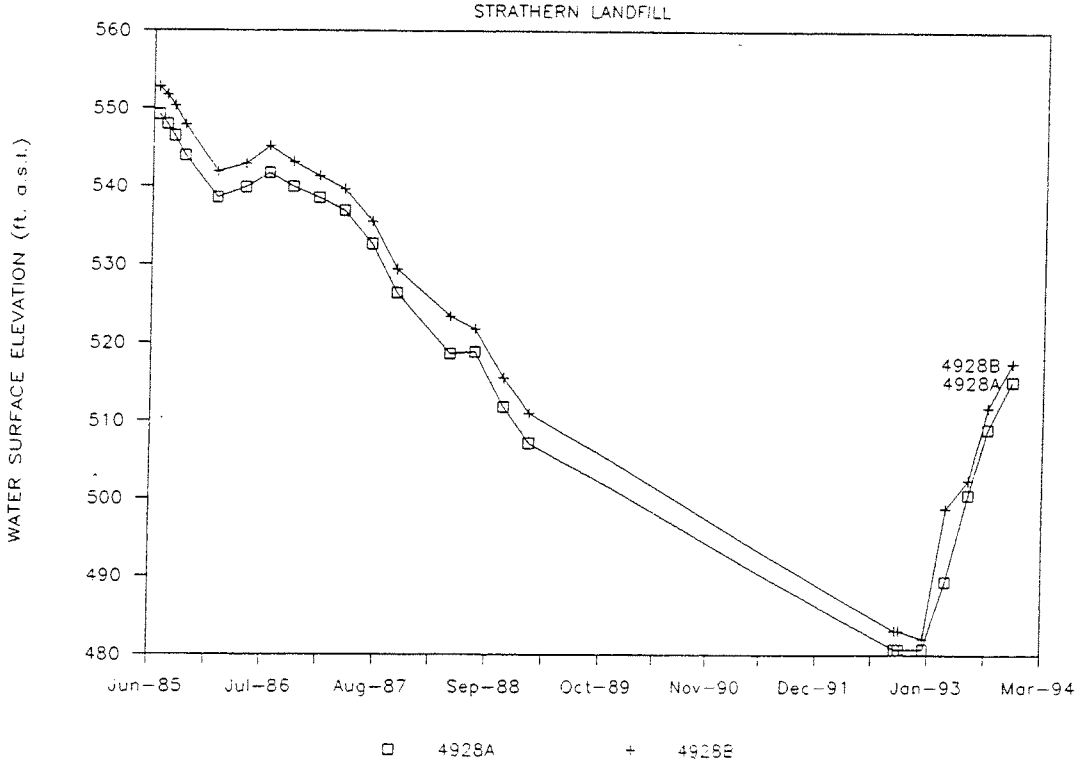
HYDROGRAPH

CONFIDENTIAL

FORM 120 JOB [illegible] DATE [illegible] BY [illegible] CHKD. [illegible] O.E. [illegible]

HYDROGRAPH

STRATHERN LANDFILL



LAW/CRANDALL, INC.

APPENDIX D

GROUNDWATER SAMPLING PROTOCOL

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GROUNDWATER SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting groundwater samples, sample preservation, identification and delivery to the laboratory.

Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.

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Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Groundwater samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

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Sample Identification and Chain of Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. All packages sent to the laboratory shall be accompanied by the Chain of Custody Record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

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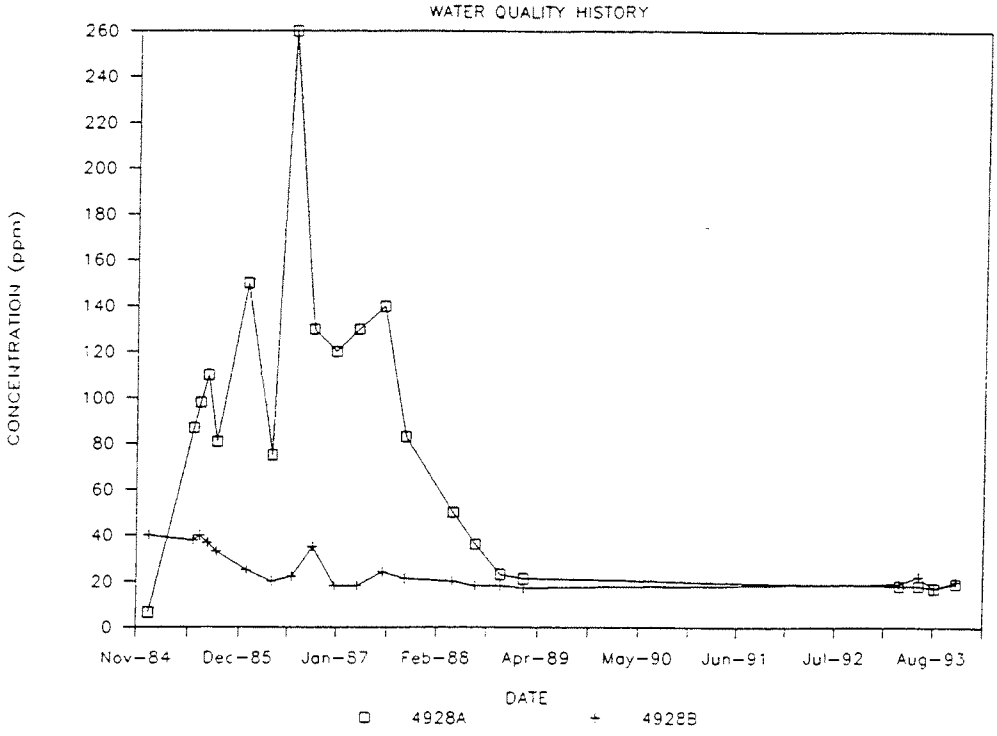
APPENDIX E

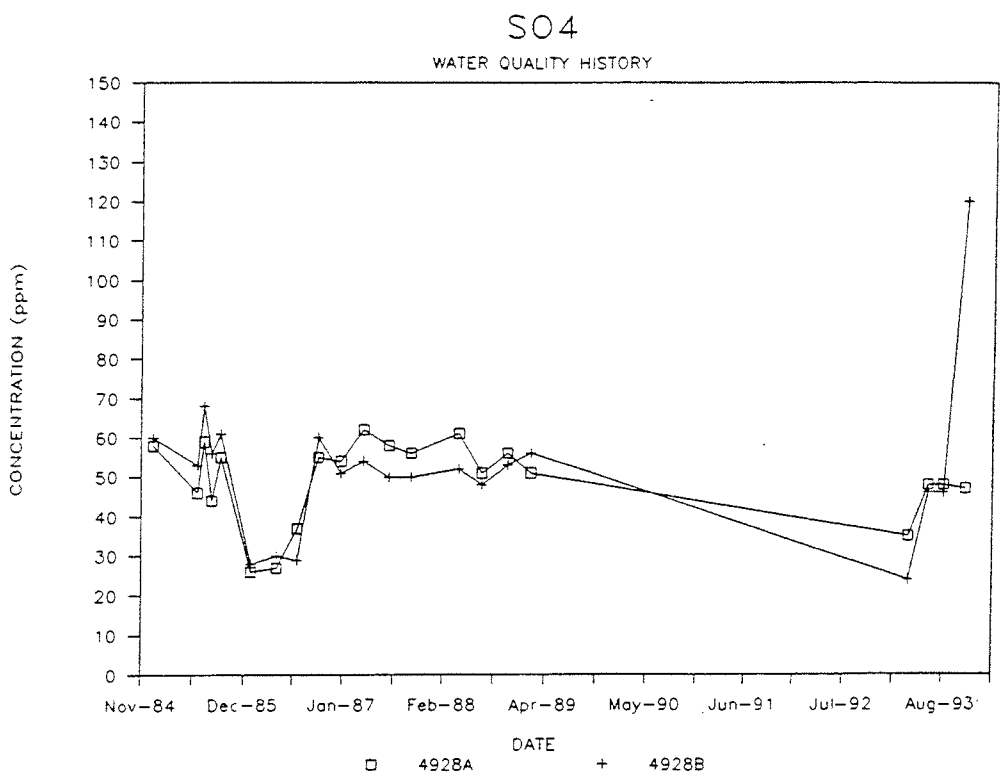
WATER QUALITY HISTORY
AND STATISTICAL DISTRIBUTION GRAPHS

LEGEND

SAMPLING POINT	WELL NO.
1	4928A
2	4928B

+ Historical Data
# 1993 Data





LAW/CRANDALL, INC.

JOB ... DATE ... DR. ... O.E. ... CHKD.

FORM 120

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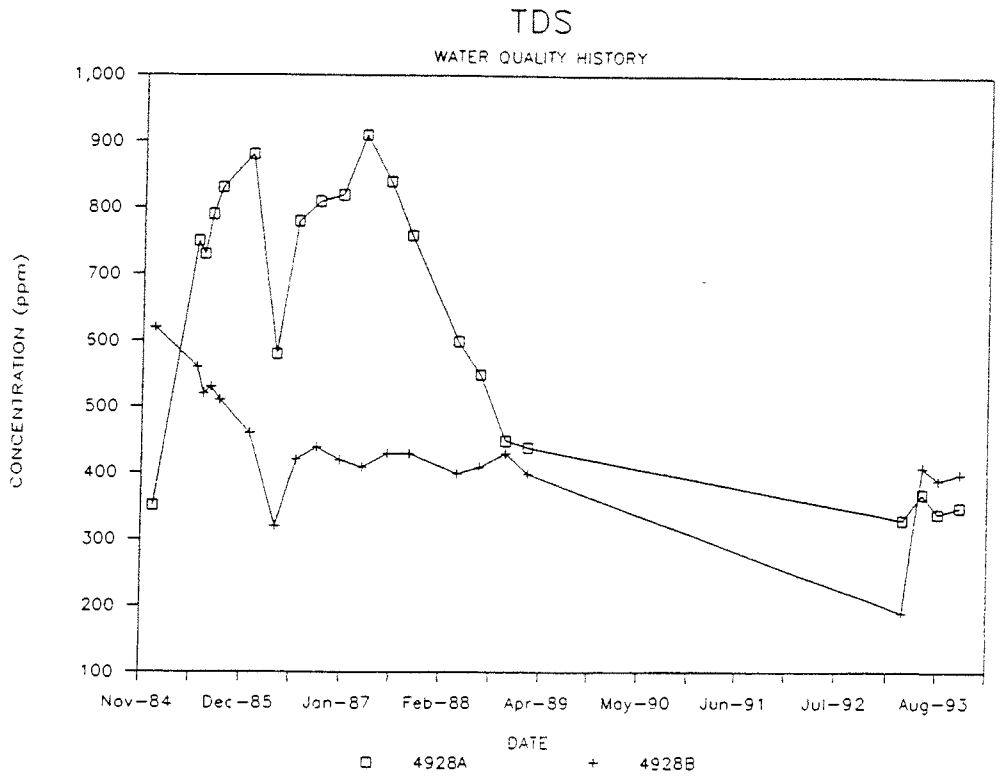
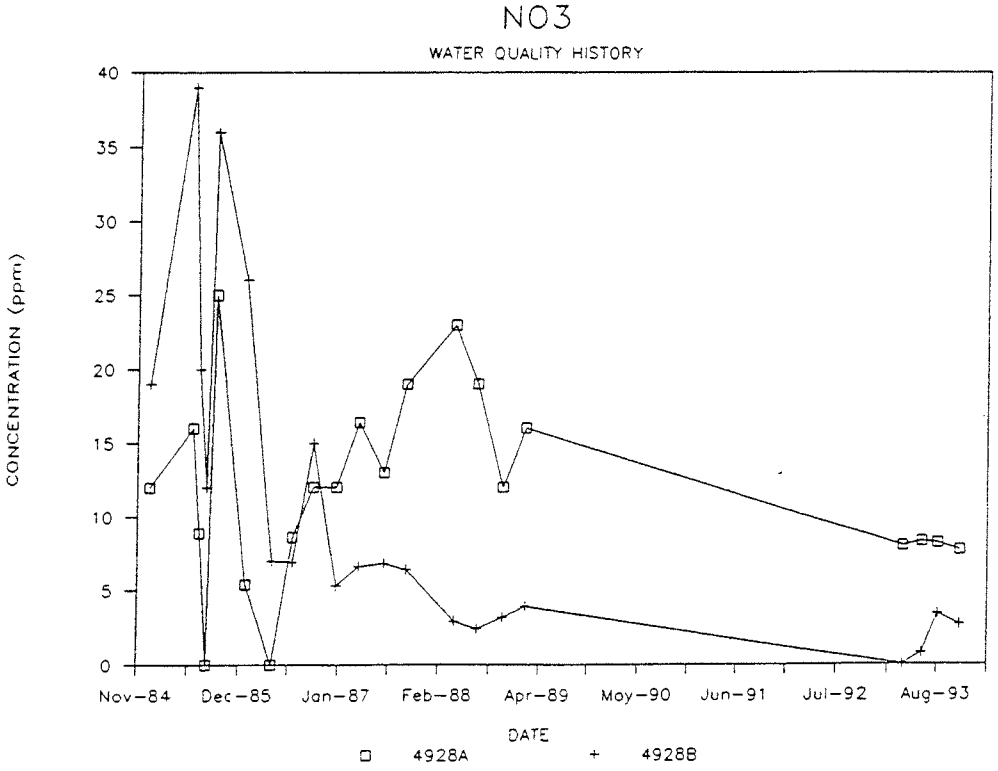




JOB DATE DR. O.E. CHKD.

FORM 120

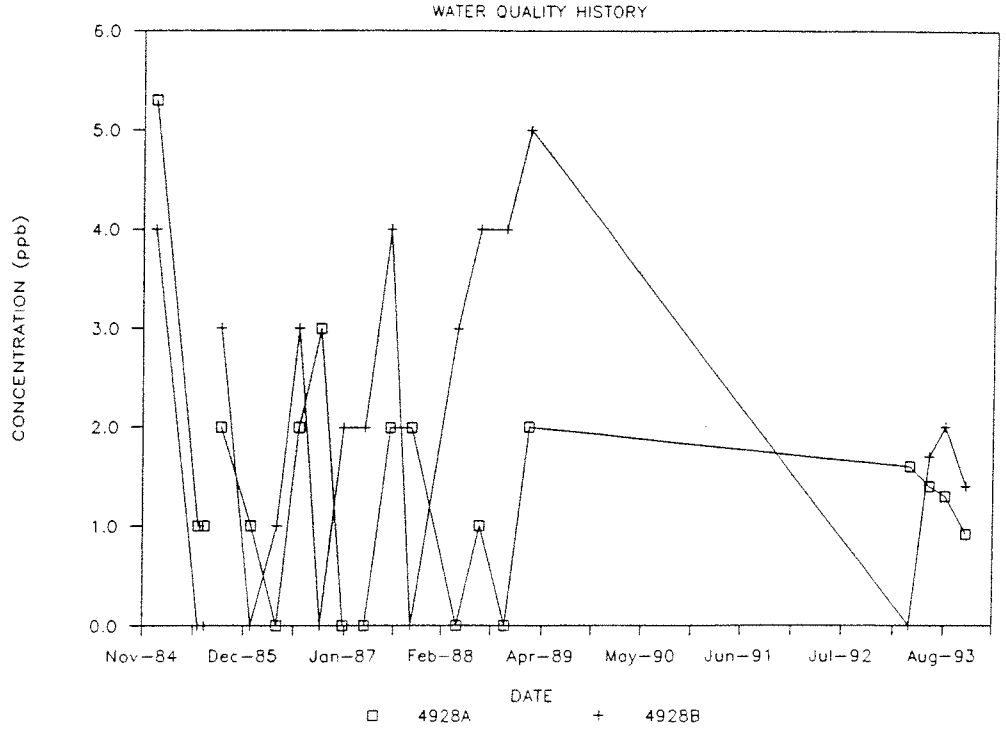
LAW/CRANDALL, INC.

004253

FORM 120 JOB [illegible] DATE [illegible] DR. O.E. CHKD.

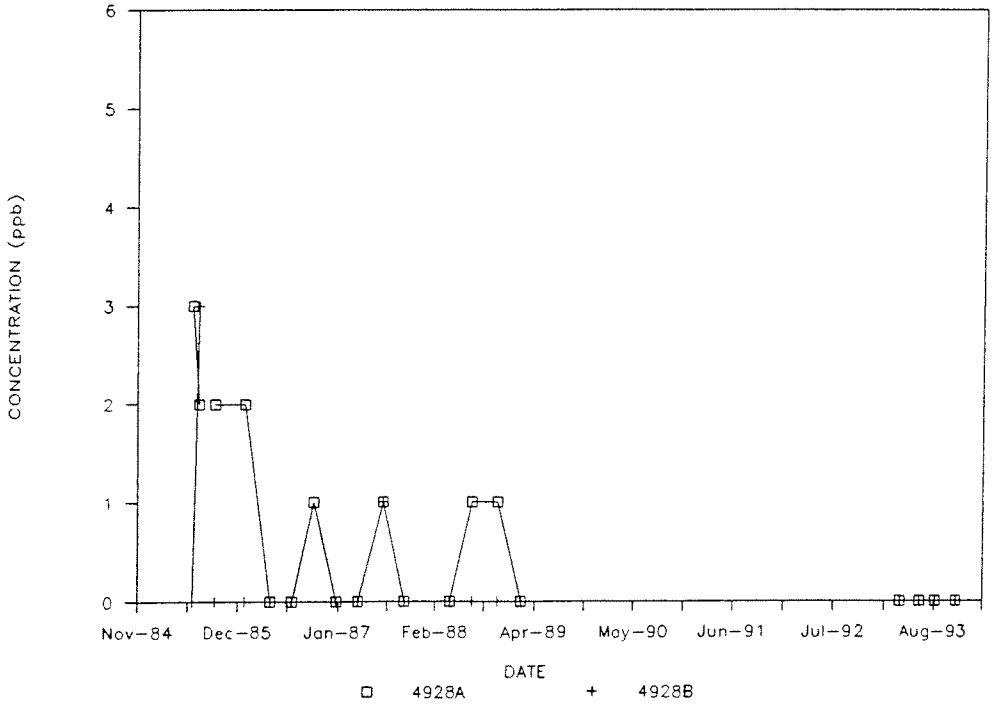
PCE

WATER QUALITY HISTORY



1,2DCA

WATER QUALITY HISTORY



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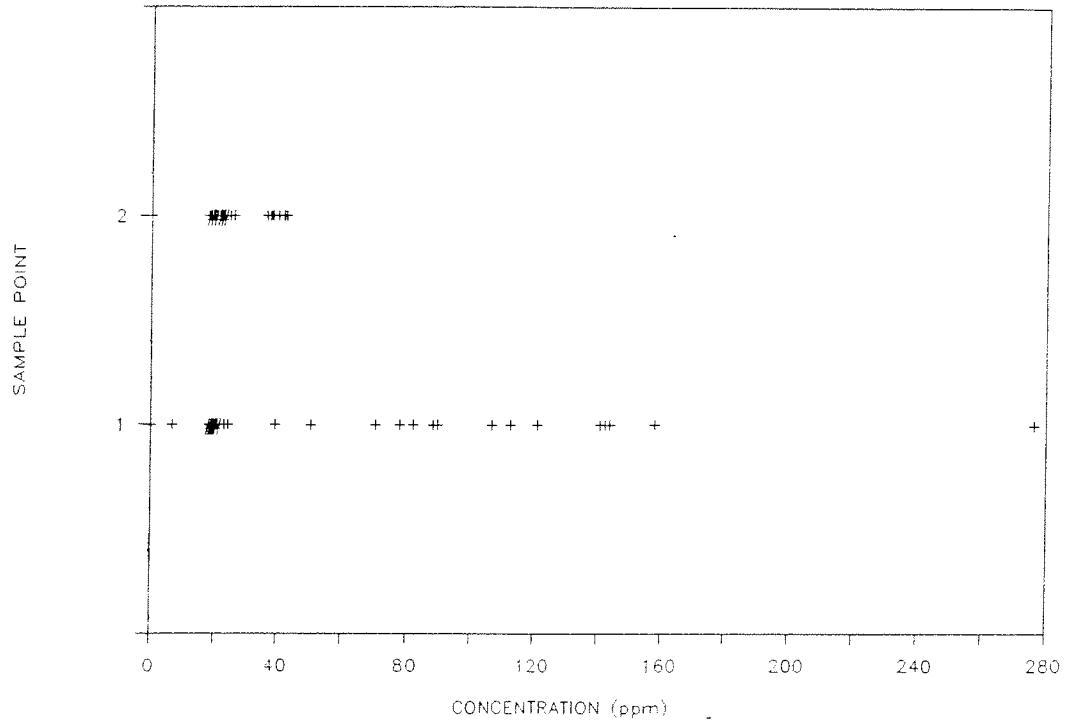

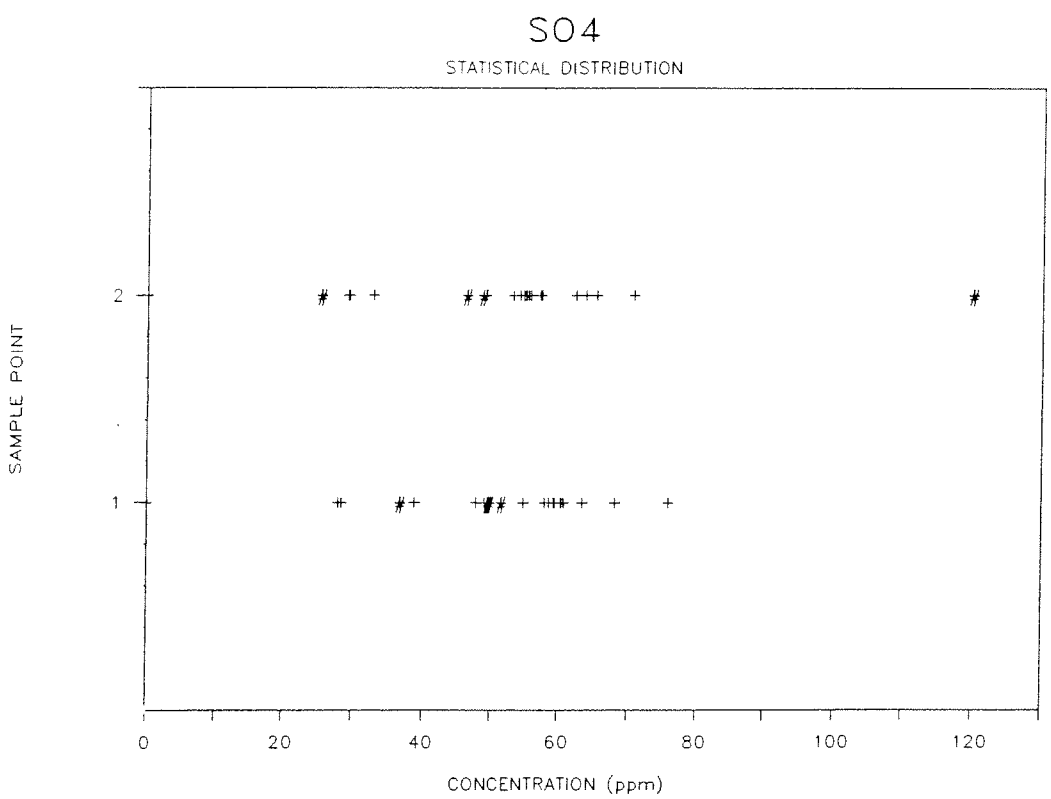

LAW/CRANDALL, INC.

004255

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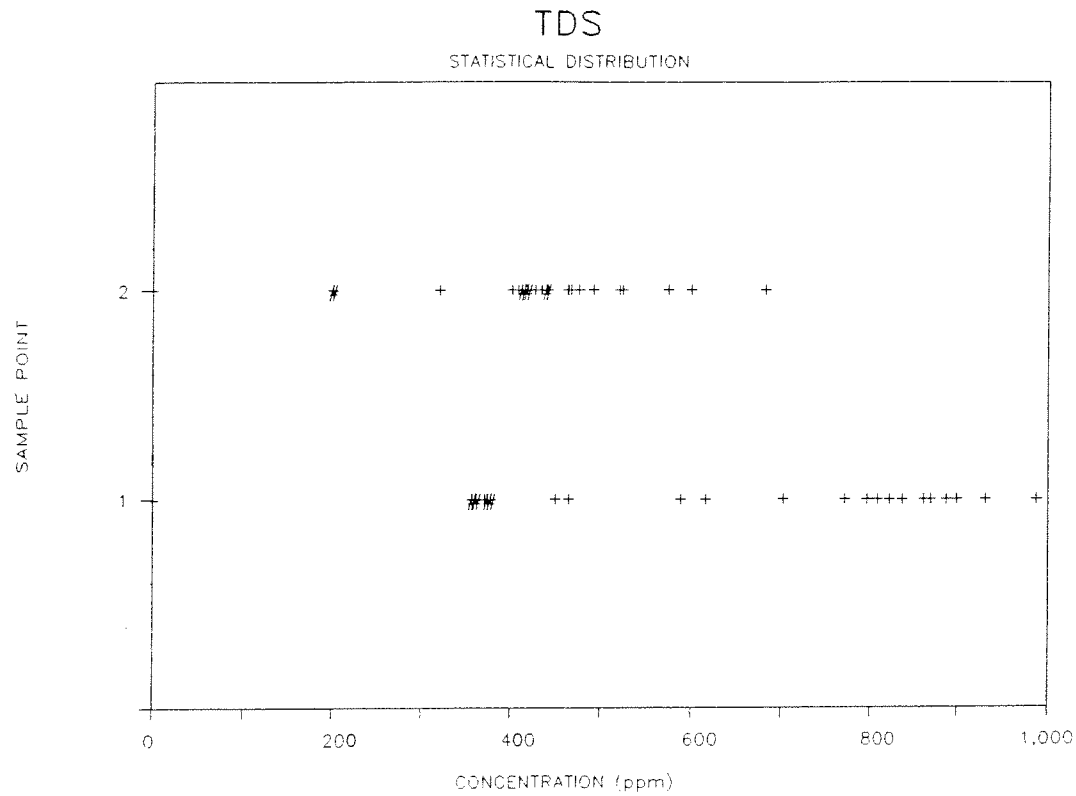
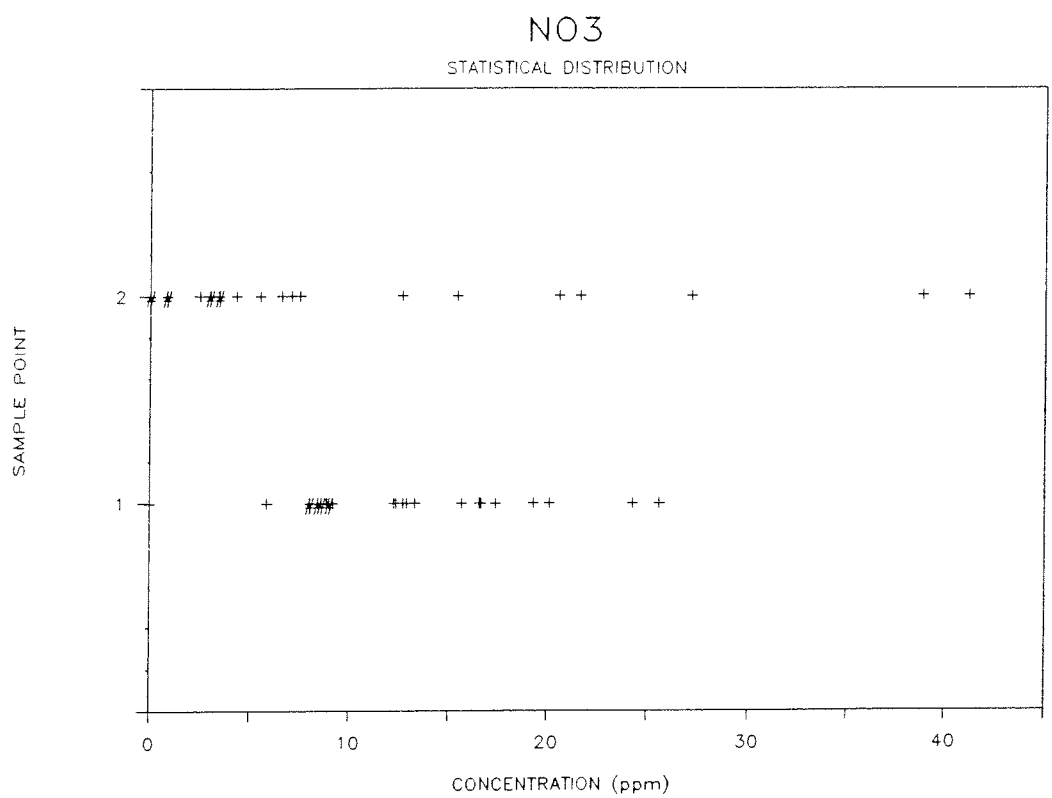
JOB 2 ... DATE 1/3 ... DR. ... O.E. ... CHKD. ...





FORM 120

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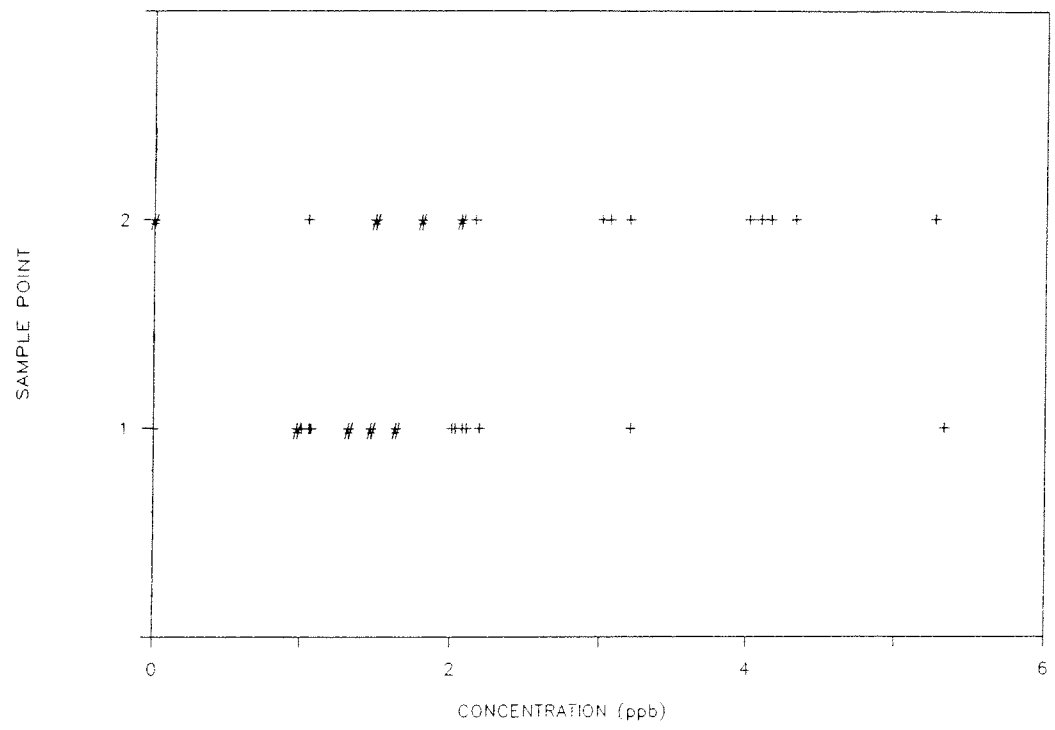
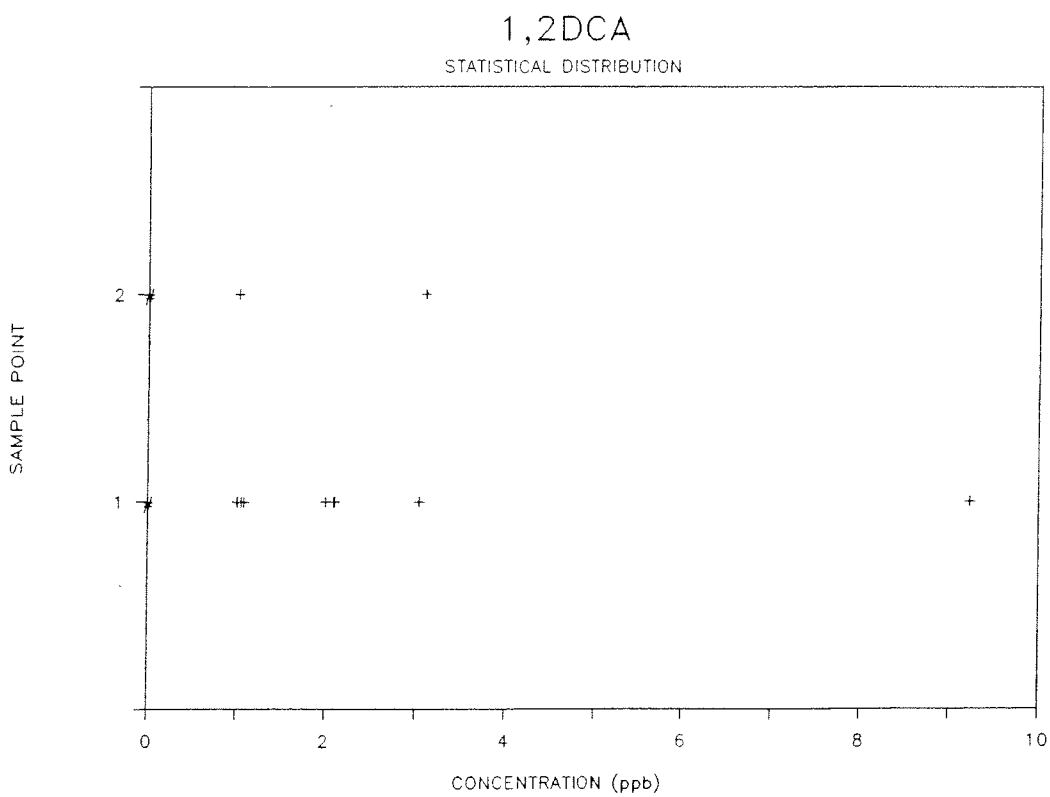
004256





LAW/CRANDALL, INC.

JOB 20 000 DATE 1/3/ DR. O.E. CHKD.

FORM 120

APPENDIX F

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

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B C Analytical

ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed: 4-20 '93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	190	260
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	190	260
Calcium (6010), mg/L	26	72
Magnesium (6010), mg/L	19	17
Chloride (325.3), mg/L	19	18
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.82	0.20
Manganese (6010), mg/L	0.064	<0.01
pH (150.1/9040), Units	8.1	7.6
Potassium (6010), mg/L	4.7	4.6
Sodium (6010), mg/L	34	29
Sulfate (375.4), mg/L	24	35
Conductivity (120.1), umhos/cm	410	590
Filterable Residue, TDS (160.1), mg/L	190	330
Zinc (6010), mg/L	3.5	0.37
Ion Balance, Percent	3.86	1.45

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801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Nitrate (353.2)		
Nitrate (as N), mg/L	<0.05	1.8
Nitrate (as NO3), mg/L	<0.2	8.0
Digestion (3005), Date	04/05/93	04/05/93
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (340.2), mg/L	0.28	0.43
Furnace Digestion (3020), Date	04/07/93	04/07/93
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.087	0.069
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	0.005	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.049	0.0048
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
Cyanide (9010), mg/L	<0.02	<0.02
COD (410.4), mg/L	<6	<6
Phenolics (9065), mg/L	<0.05	<0.05

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Glendale, CA 91201
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LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
B/N,A Ext.Pri.Poll. (EPA 8270)		
Date Analyzed	04/08/93	04/08/93
Date Extracted	04/06/93	04/06/93
Dilution Factor, Times	1	1
1,2,4-Trichlorobenzene, ug/L	<5	<5
1,2-Dichlorobenzene, ug/L	<6	<6
1,2-Diphenylhydrazine, ug/L	<5	<5
1,3-Dichlorobenzene, ug/L	<5	<5
1,4-Dichlorobenzene, ug/L	<5	<5
2,4,5-Trichlorophenol, ug/L	<6	<6
2,4,6-Trichlorophenol, ug/L	<5	<5
2,4-Dichlorophenol, ug/L	<5	<5
2,4-Dimethylphenol, ug/L	<5	<5
2,4-Dinitrophenol, ug/L	<5	<5
2,4-Dinitrotoluene, ug/L	<5	<5
2,6-Dinitrotoluene, ug/L	<5	<5
2-Chloronaphthalene, ug/L	<6	<6
2-Chlorophenol, ug/L	<5	<5
2-Methyl-4,6-dinitrophenol, ug/L	<5	<5
2-Methylnaphthalene, ug/L	<5	<5
2-Methylphenol (o-Cresol), ug/L	<5	<5
2-Nitroaniline, ug/L	<5	<5
2-Nitrophenol, ug/L	<5	<5
3,3'-Dichlorobenzidine, ug/L	<20	<20
3-Nitroaniline, ug/L	<5	<5
4-Bromophenylphenylether, ug/L	<5	<5
4-Chloro-3-methylphenol, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
4-Chloroaniline, ug/L	<5	<5
4-Chlorophenylphenylether, ug/L	<5	<5
4-Methylphenol (p-Cresol), ug/L	<8	<8
4-Nitroaniline, ug/L	<6	<6
4-Nitrophenol, ug/L	<5	<5
Acenaphthene, ug/L	<5	<5
Acenaphthylene, ug/L	<5	<5
Aniline, ug/L	<5	<5
Anthracene, ug/L	<5	<5
Benzidine, ug/L	<200	<200
Benzo(a)anthracene, ug/L	<5	<5
Benzo(a)pyrene, ug/L	<5	<5
Benzo(b)fluoranthene, ug/L	<5	<5
Benzo(g,h,i)perylene, ug/L	<5	<5
Benzo(k)fluoranthene, ug/L	<5	<5
Benzyl Alcohol, ug/L	<5	<5
Benzoic acid, ug/L	<50	<50
Butylbenzylphthalate, ug/L	<5	<5
Chrysene, ug/L	<5	<5
Di-n-octylphthalate, ug/L	<5	<5
Dibenzo(a,h)anthracene, ug/L	<5	<5
Dibenzofuran, ug/L	<5	<5
Dibutylphthalate, ug/L	<5	<5
Diethylphthalate, ug/L	<5	<5
Dimethylphthalate, ug/L	<5	<5
Fluoranthene, ug/L	<5	<5
Fluorene, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Hexachlorobenzene, ug/L	<5	<5
Hexachlorobutadiene, ug/L	<5	<5
Hexachlorocyclopentadiene, ug/L	<5	<5
Hexachloroethane, ug/L	<5	<5
Indeno(1,2,3-c,d)pyrene, ug/L	<7	<7
Isophorone, ug/L	<5	<5
N-Nitrosodimethylamine, ug/L	<6	<6
N-Nitrosodiphenylamine, ug/L	<5	<5
N-Nitrosodi-n-propylamine, ug/L	<6	<6
Nitrobenzene, ug/L	<5	<5
Naphthalene, ug/L	<5	<5
Phenanthrene, ug/L	<5	<5
Phenol, ug/L	<5	<5
Pentachlorophenol, ug/L	<5	<5
Pyrene, ug/L	<5	<5
Bis(2-chloroethoxy)methane, ug/L	<5	<5
Bis(2-chloroethyl)ether, ug/L	<5	<5
Bis(2-chloroisopropyl)ether, ug/L	<6	<6
Bis(2-ethylhexyl)phthalate, ug/L	<7	<7
Dioxin Screen, ug/L	<5	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2			
Pesticides/PCBs (EPA 8080)					
Date Analyzed	04/06/93	04/06/93			
Date Extracted	04/05/93	04/05/93			
Dilution Factor, Times	1	1			
Aldrin, ug/L	<0.04	<0.04			
Chlordane, ug/L	<0.4	<0.4			
p,p'-DDD, ug/L	<0.04	<0.04			
p,p'-DDE, ug/L	<0.04	<0.04			
p,p'-DDT, ug/L	<0.04	<0.04			
Dieldrin, ug/L	<0.05	<0.05			
Endosulfan I, ug/L	<0.05	<0.05			
Endosulfan II, ug/L	<0.05	<0.05			
Endosulfan sulfate, ug/L	<0.1	<0.1			
Endrin, ug/L	<0.05	<0.05			
Endrin aldehyde, ug/L	<0.04	<0.04			
Heptachlor epoxide, ug/L	<0.05	<0.05			
Heptachlor, ug/L	<0.03	<0.03			
Methoxychlor, ug/L	<0.05	<0.05			
Aroclor 1016, ug/L	<1	<1			
Aroclor 1221, ug/L	<1	<1			
Aroclor 1232, ug/L	<1	<1			
Aroclor 1242, ug/L	<1	<1			
Aroclor 1248, ug/L	<1	<1			
Aroclor 1254, ug/L	<1	<1			
Aroclor 1260, ug/L	<1	<1			
Aroclor 1262, ug/L	<1	<1			
Toxaphene, ug/L	<0.5	<0.5			

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200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2	
BHC, alpha isomer, ug/L	<0.03	<0.03	
BHC, beta isomer, ug/L	<0.04	<0.04	
BHC, delta isomer, ug/L	<0.04	<0.04	
BHC, gamma isomer (Lindane), ug/L	<0.04	<0.04	

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801 Western Avenue
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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2	
Halocarbons/EPA 8010			
Date Analyzed	04/15/93	04/15/93	
Date Confirmed	04/15/93	04/15/93	
Dilution Factor, Times	1	1	
1,1,1-Trichloroethane, ug/L	<0.5	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	<0.5	
1,1-Dichloroethane, ug/L	<0.5	<0.5	
1,1-Dichloroethene, ug/L	<0.5	<0.5	
1,2-Dichloroethane, ug/L	<0.5	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	
1,2-Dichloropropane, ug/L	<0.5	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	
2-Chloroethylvinylether, ug/L	<0.5	<0.5	
Bromodichloromethane, ug/L	<0.5	<0.5	
Bromomethane, ug/L	<0.5	<0.5	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.5	<0.5	
Carbon Tetrachloride, ug/L	<0.5	<0.5	
Chloroethane, ug/L	<0.5	<0.5	
Chloroform, ug/L	<0.5	<0.5	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.5	<0.5	
Dichlorodifluoromethane, ug/L	<3	<3	
Freon 113, ug/L	<1	<1	
Methylene chloride, ug/L	<0.5	<0.5	

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Trichloroethene, ug/L	0.90	<0.5
Trichlorofluoromethane, ug/L	<0.5	<0.5
Tetrachloroethene, ug/L	<0.5	1.6
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Vol.Pri.Poll. (EPA 8240)		
Date Analyzed	04/06/93	04/06/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1
Chloromethane, ug/L	<1	<1

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LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	<1	1.3
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<1	<1
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA 8240)	---	---

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
04-025-3	Trip Blank #30401	

PARAMETER	04-025-3
Sample Held, Not Analyzed	HOLD

James C. Hein, Laboratory Director

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-1
Sample Description: 4928 B

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	<0.2	<0.0032
Chloride (325.3)	19	0.54
Sulfate (375.4)	24	0.5
Bicarbonate (as HCO3)	230	3.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		4.9
Cations	**mg/L**	**meq/L**
Magnesium (6010)	19	1.6
Sodium (6010)	34	1.5
Potassium (6010)	4.7	0.12
Calcium (6010)	26	1.3
Total Millequivalents per Liter		4.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	190
Ca Hardness (as CaCO3)	65
Mg Hardness (as CaCO3)	78
Total Hardness	143
Iron (6010)	0.82
Manganese (6010)	0.064
Copper (6010)	<0.02
Zinc (6010)	3.5
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	190
Sp. Conductance, umhos/cm	410
pH (150.1/9040), units	8.1
Ion balance in percent	3.86

* Conforms to Title 22, California Administrative Code

BCA

004271

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-2
Sample Description: 4928 A

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.0	0.13
Chloride (325.3)	18	0.51
Sulfate (375.4)	35	0.73
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.6

Cations	mg/L	meq/L
Magnesium (6010)	17	1.4
Sodium (6010)	29	1.3
Potassium (6010)	4.6	0.12
Calcium (6010)	72	3.6
Total Millequivalents per Liter		6.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	260
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	70
Total Hardness	250
Iron (6010)	0.20
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.37
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	330
Sp. Conductance, umhos/cm	590
pH (150.1/9040), units	7.6
Ion balance in percent	1.45

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004272

CHAIN OF CUSTODY RECORD

BCA Log Number 93-04-025

Client name: Law/Crandall, Inc.	Project or PO#: 2702.20396
Address: 200 N. Citadel Dr.	Phone #: (213) 889-5300
City, State, Zip: Los Angeles CA 90040	Report attention: B. D'Braitis

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: Martine Alter / Sample description	Number of containers	601	Dioxin-Screen	625 + 624	POH + CCD	GM + Nitrate	Metals	Cyanide	Hazardous sample Special handling required HOLD	Remarks
	4-2-93	10:00	GW	4928B	13	X	X	X	X	X	X	X		Run 624 first.
	4-2-93	1:00	GW	4928A	13	X	X	X	X	X	X	X		If ND please
	4-2-93	—	BW	Trip Blank * 30401	2								X	run for 601/602
														to get lower DL's
														CSM 4-2-93

	Signature	Print Name	Company	Date	Time
Relinquished by	Martine Alter	Martine Alter	Law/Crandall, Inc.	4-2-93	1:99
Received by	Jin Wang	LORI WONG	BCA	4/2/93	1:50
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 901 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

004213

CONFIDENTIAL

CONFIDENTIAL

B C Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed: JUL 8 1993

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-06-364-1
Sample Description: 4928B

General Mineral Analysis
Sampled Date 22 JUN 93

Anions	mg/L	meq/L
Nitrate (as NO3)	0.78	0.013
Chloride (325.3)	22	0.62
Sulfate (375.4)	46	0.96
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		7.6

Cations	mg/L	meq/L
Magnesium (6010)	26	2.1
Sodium (6010)	39	1.7
Potassium (6010)	6.2	0.16
Calcium (6010)	70	3.5
Total Millequivalents per Liter		7.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	110
Total Hardness	280
Iron (6010)	14
Manganese (6010)	0.53
Copper (6010)	<0.02
Zinc (6010)	3.7
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	410
Sp. Conductance, umhos/cm	690
pH (150.1/9040), units	7.0
Ion balance in percent	1.14

* Conforms to Title 22, California Administrative Code

BCA

004274

CONFIDENTIAL

B C Analytical

861 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-06-364-2
Sample Description: 4928A

General Mineral Analysis
Sampled Date 22 JUN 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.3	0.13
Chloride (325.3)	18	0.51
Sulfate (375.4)	48	1
Bicarbonate (as HCO3)	290	4.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.5

Cations	mg/L	meq/L
Magnesium (6010)	18	1.5
Sodium (6010)	29	1.3
Potassium (6010)	4.5	0.12
Calcium (6010)	72	3.6
Total Millequivalents per Liter		6.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	240
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	74
Total Hardness	254
Iron (6010)	0.12
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.25
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	370
Sp. Conductance, umhos/cm	610
pH (150.1/9040), units	7.5
Ion balance in percent	0.30

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004275

CONFIDENTIAL

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2	
Furnace Digestion (3020), Date	06/28/93	06/28/93	
Alkalinity (310.1)			
Carbonate Alk (as CaCO3), mg/L	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	300	240	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	
Total Alkalinity (as CaCO3), mg/L	300	240	
Calcium (6010), mg/L	70	72	
Magnesium (6010), mg/L	26	18	
Chloride (325.3), mg/L	22	18	
Copper (6010), mg/L	<0.02	<0.02	
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1	
Iron (6010), mg/L	14	0.12	
Manganese (6010), mg/L	0.53	<0.01	
pH (150.1/9040), Units	7.0	7.5	
Potassium (6010), mg/L	6.2	4.5	
Sodium (6010), mg/L	39	29	
Sulfate (375.4), mg/L	46	48	
Conductivity (120.1), umhos/cm	690	610	
Filterable Residue, TDS (160.1), mg/L	410	370	
Zinc (6010), mg/L	3.7	0.25	
Ion Balance, Percent	1.14	0.30	

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Nitrate (353.2)		
Nitrate (as N), mg/L	0.18	1.9
Nitrate (as NO3), mg/L	0.78	8.3
Digestion (3010), Date	06/28/93	06/28/93
Aluminum (6010), mg/L	0.19	<0.1
Fluoride (340.2), mg/kg	0.25	0.49
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.12	0.077
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	0.0010	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.024	0.0028
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
COD (410.4), mg/L	7.2	7.7

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Vol.Pri.Poll. (EPA 8240)		
Date Analyzed	07/01/93	07/01/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<2	<2
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	1.7	1.4
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<3	<3
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA 8240)	---	---

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

James C. Hein, Laboratory Director

CONFIDENTIAL

BC ANALYTICAL

BATCH QC REPORT
ORDER: G9306364

DATE REPORTED : 07/08/93

MATRIX QC PRECISION (DUPLICATES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE %DIFF
pH (150.1/9040)	06.22.93	93311	7.0	7.0	Units	0
Conductivity (120.1)	06.28.93	9358	750	710	umhos/cm	5
Conductivity (120.1)	06.28.93	9358	850	860	umhos/cm	1
COD (410.4)	06.24.93	93209	7.2	7.2	mg/L	0

CONFIDENTIAL

CHAIN OF CUSTODY RECORD

BCA Log Number G93-06-364

Client name: LAW / C Randall	Project or PO#: 7702.70346.1
Address: 200 Citadel Dr.	Phone #: (213) 869-3300
City, State, Zip: LA Ca 90040	Report attention: RA Sayyar
Sampled by: Randy A. Sayyar	

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gw min	624	Metals	COD				Hazardous sample Special handling required	Remarks
	6.22.93	1130 ~~4928A~~	GW	4928B	5	X	X	X	X	X				Send Bill To:
	1	1045 ~~4928B~~	GW	4928A	5	X	X		X	X				LA Cy Products
														1810 E. 25th St
														LA Ca 90058
														ATTN: Mike Mallister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Sayyar	Randy A. Sayyar	LAW / C Randall	6.22.93	[illegible]
Received by lab	Susan Arrowsmith	B.S. ARROWSMITH	BC Analytical	6/22/93	12:00
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

004282

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed: SEP 7 1993

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-08-327-1
Sample Description: 4928B

General Mineral Analysis
Sampled Date 24 AUG 93

Anions	mg/L	meq/L
Nitrate (as NO3)	3.4	0.055
Chloride (325.3)	17	0.48
Sulfate (375.4)	46	0.96
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		7.5

Cations	mg/L	meq/L
Magnesium (6010)	22	1.8
Sodium (6010)	32	1.4
Potassium (6010)	5.0	0.13
Calcium (6010)	82	4.1
Total Millequivalents per Liter		7.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	200
Mg Hardness (as CaCO3)	90
Total Hardness	290
Iron (6010)	17
Manganese (6010)	0.40
Copper (6010)	<0.02
Zinc (6010)	4.6
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	390
Sp. Conductance, umhos/cm	680
pH (150.1/9040), units	6.5
Ion balance in percent	0.70

* Conforms to Title 22, California Administrative Code

BCA

004283

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-08-327-2
Sample Description: 4928A

General Mineral Analysis
Sampled Date 24 AUG 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.2	0.13
Chloride (325.3)	17	0.48
Sulfate (375.4)	48	1
Bicarbonate (as HCO3)	290	4.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.5

Cations	mg/L	meq/L
Magnesium (6010)	18	1.5
Sodium (6010)	30	1.3
Potassium (6010)	4.6	0.12
Calcium (6010)	73	3.6
Total Millequivalents per Liter	6.5	

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	240
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	74
Total Hardness	254
Iron (6010)	0.17
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.25
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	340
Sp. Conductance, umhos/cm	610
pH (150.1/9040), units	7.1
Ion balance in percent	0.53

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004284

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Furnace Digestion (3020), Date	08/30/93	08/30/93
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	300	240
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	300	240
Calcium (6010), mg/L	82	73
Magnesium (6010), mg/L	22	18
Chloride (325.3), mg/L	17	17
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	17	0.17
Manganese (6010), mg/L	0.40	<0.01
pH (150.1/9040), Units	6.5	7.1
Potassium (6010), mg/L	5.0	4.6
Sodium (6010), mg/L	32	30
Sulfate (375.4), mg/L	46	48
Conductivity (120.1), umhos/cm	680	610
Filterable Residue, TDS (160.1), mg/L	390	340
Zinc (6010), mg/L	4.6	0.25
Ion Balance, Percent	0.70	0.53

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Nitrate (353.2)		
Nitrate (as N), mg/L	0.77	1.8
Nitrate (as NO3), mg/L	3.4	8.2
Digestion (3010), Date	08/30/93	08/30/93
Aluminum (6010), mg/L	0.28	<0.1
Fluoride (340.2), mg/L	0.38	0.47
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.13	0.079
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	<0.001	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.018	0.0042
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
COD (410.4), mg/L	<6	<6

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B C Analytical

801 Western Avenue
Glendale, CA 91201
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CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Vol.Pri.Poll. (EPA-8240)		
Date Analyzed	08/31/93	08/31/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1

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801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<2	<2
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	2.0	1.3
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<3	<3
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA-8240)	---	---

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

James C. Hein, Laboratory Director

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CHAIN OF CUSTODY RECORD

BCA Log Number 93-08-327

Client name: Law/Crandall	Project or PO#: 2702.20346.1
Address: 200 Citadel Dr	Phone #: (213) 889-5300
City, State, Zip: La Ca 90040	Report attention: RA Scroggins
Sampled by: Randy A. Scroggins	

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gen. Min	COD	624	Metals				Hazardous sample Special handling required	Remarks
	8.24.93	1500	GW	4928B	6	/	/	/	/					Send Bill To:
		1530	GW	4928A	6	/	/	/	/					LA By-Products
														1810 E. 25th ST.
														LA Ca 90058
														ATTN: Mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	Law/Crandall	8.24.93	1555
Received by	Lab Susan Arrowsmith	S. ARROWSMITH	BC Analytical	8/24/93	1555
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emaryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ [illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

004290

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G93-11-279

Received: 19 NOV 93

Mailed: DEC 8 1993

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
Furnace Digestion (3020), Date	11/30/93	11/30/93
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	240	300
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	240	300
Calcium (6010), mg/L	69	93
Magnesium (6010), mg/L	17	25
Chloride (325.3), mg/L	19	20
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.13	82
Manganese (6010), mg/L	<0.01	3.8
pH (150.1/9040), Units	7.4	7.1
Potassium (6010), mg/L	4.5	5.5
Sodium (6010), mg/L	29	37
Sulfate (375.4), mg/L	47	120
Conductivity (120.1), umhos/cm	600	690
Filterable Residue, TDS (160.1), mg/L	350	400
Zinc (6010), mg/L	0.21	3.0
Ion Balance, Percent	2.04	4.0

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2	
Nitrate (353.2)			
Nitrate (as N), mg/L	1.7	0.61	
Nitrate (as NO3), mg/L	7.7	2.7	
Digestion (3010), Date	11/30/93	11/30/93	
Aluminum (6010), mg/L	<0.1	1.1	
Fluoride (340.2), mg/L	0.64	0.36	
COD (410.4), mg/L	<6	<6	
Cadmium (7131), mg/L	<0.001	<0.001	
Chromium (6010), mg/L	<0.01	<0.01	
Lead (7421), mg/L	0.0031	0.0028	
Nickel (6010), mg/L	<0.04	<0.04	

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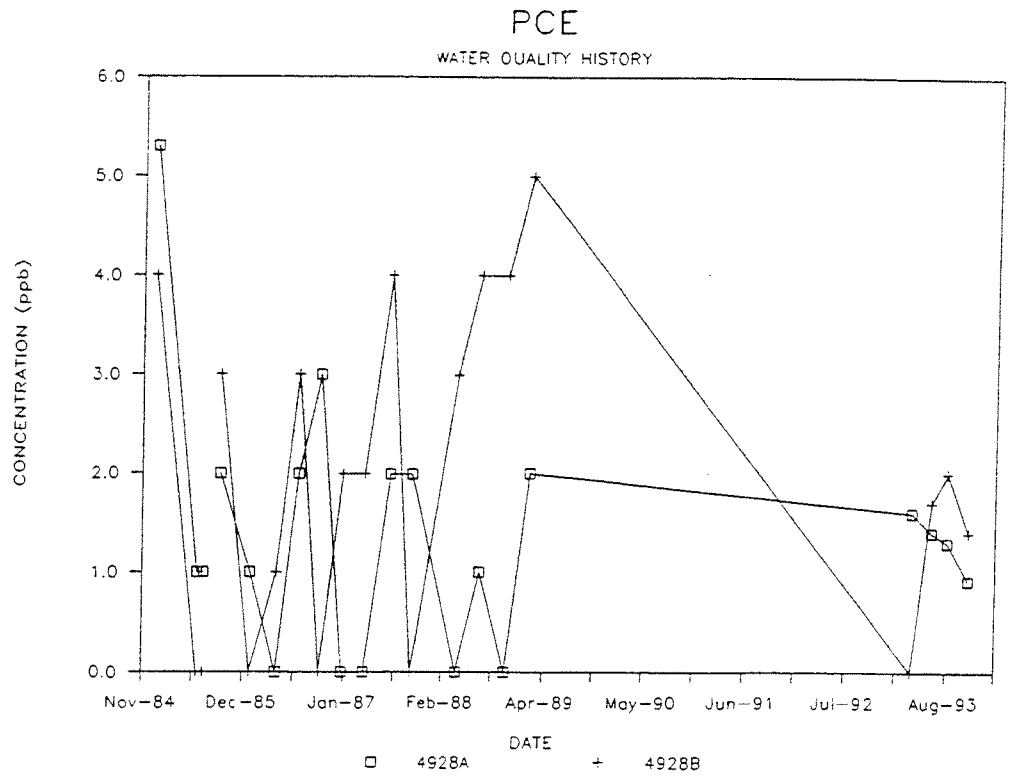
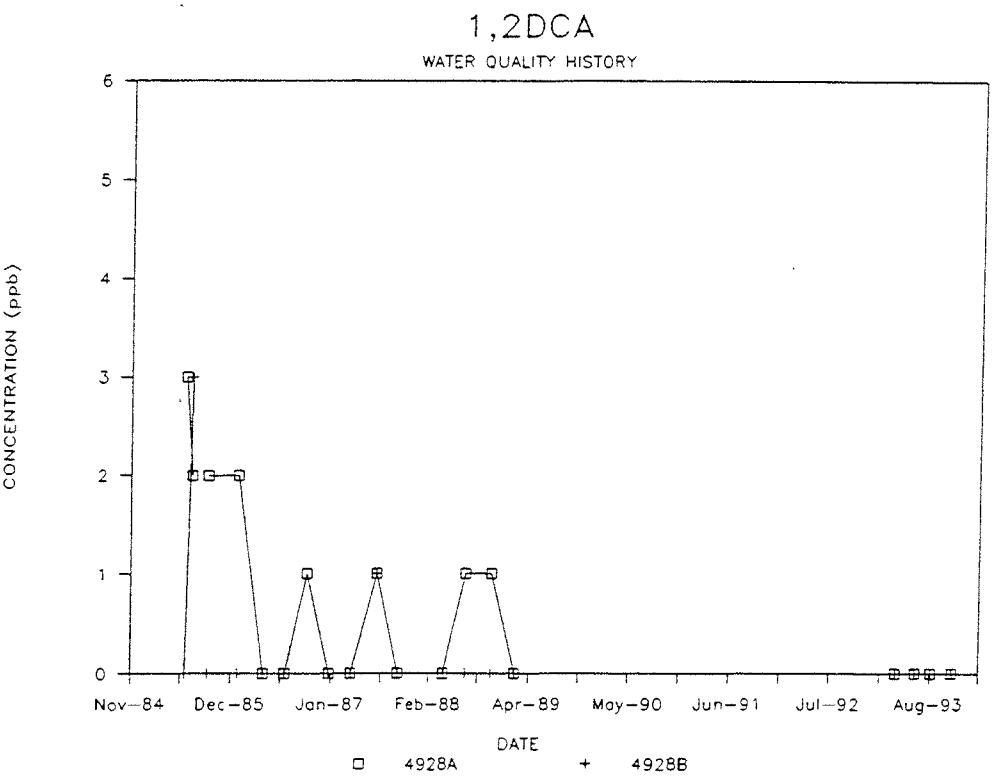




JOB DATE DR. O.E. CHKD.

FORM 120

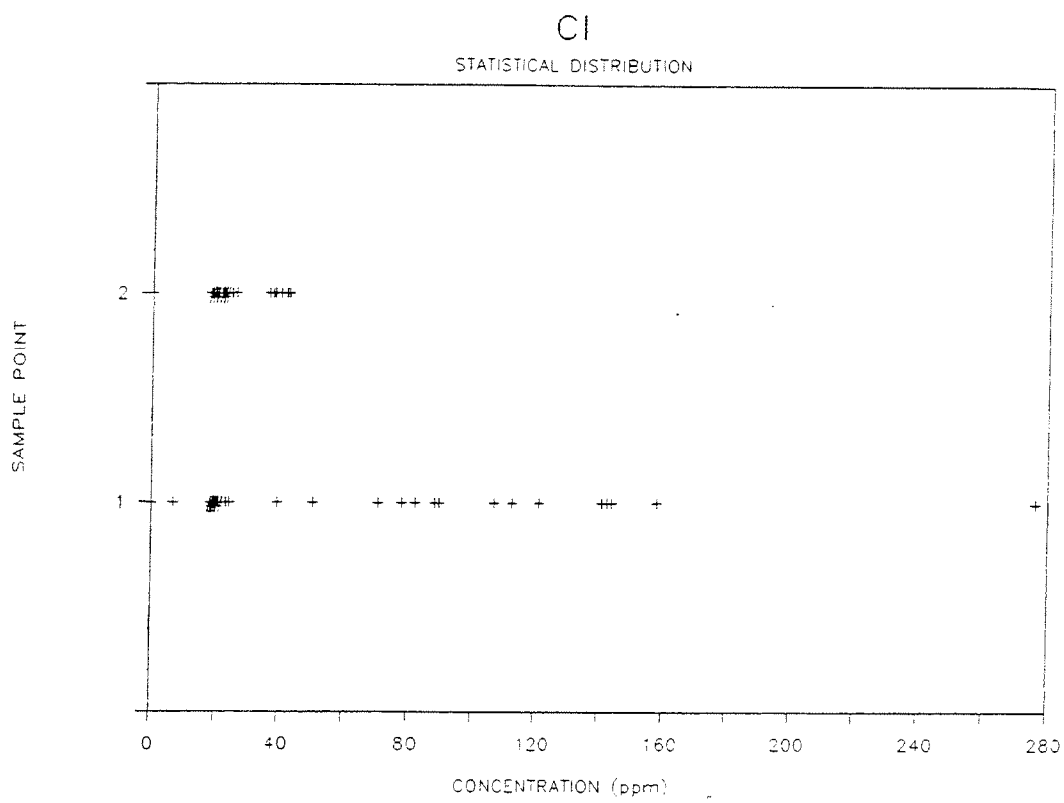
LAW/CRANDALL, INC.

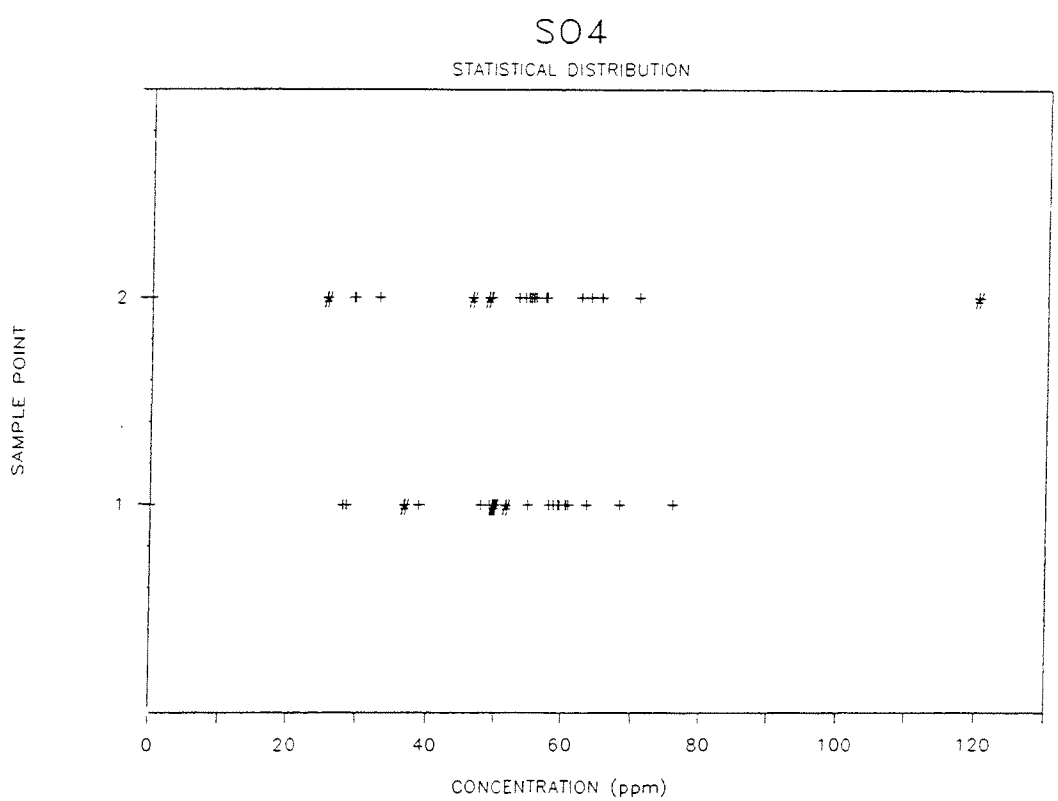
004254

CONFIDENTIAL

JOB 20 DATE 1/31 CR O.E. CHKD.

Form 20

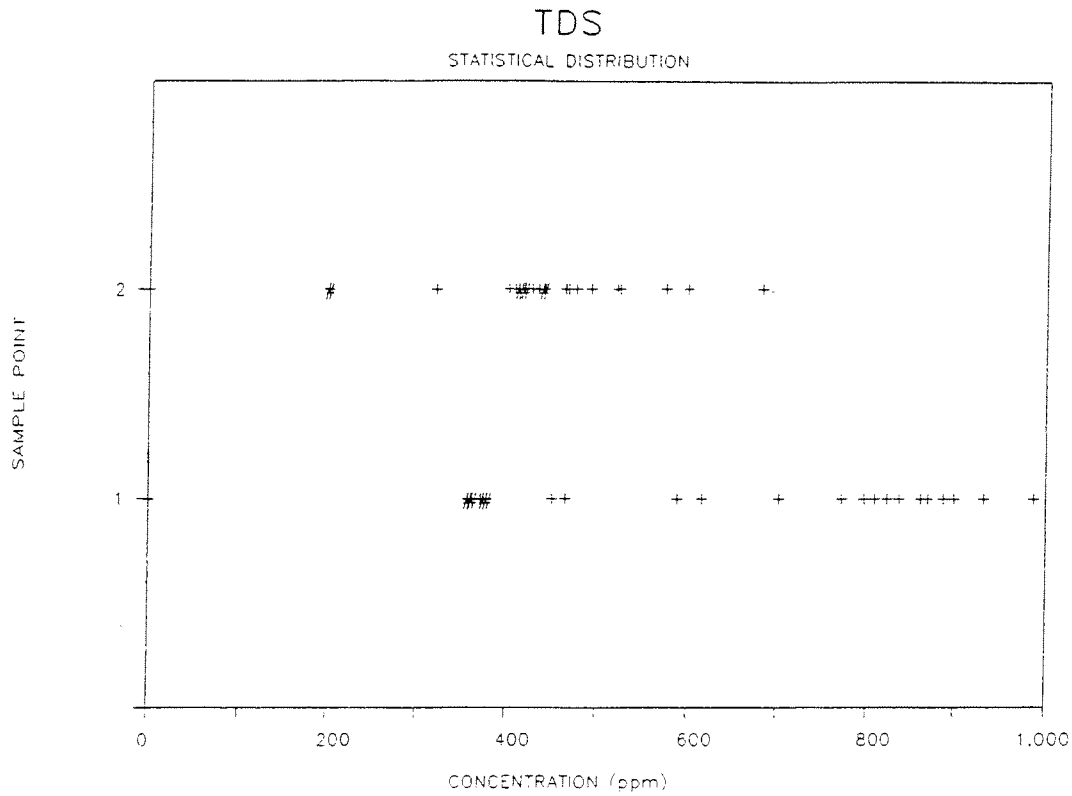


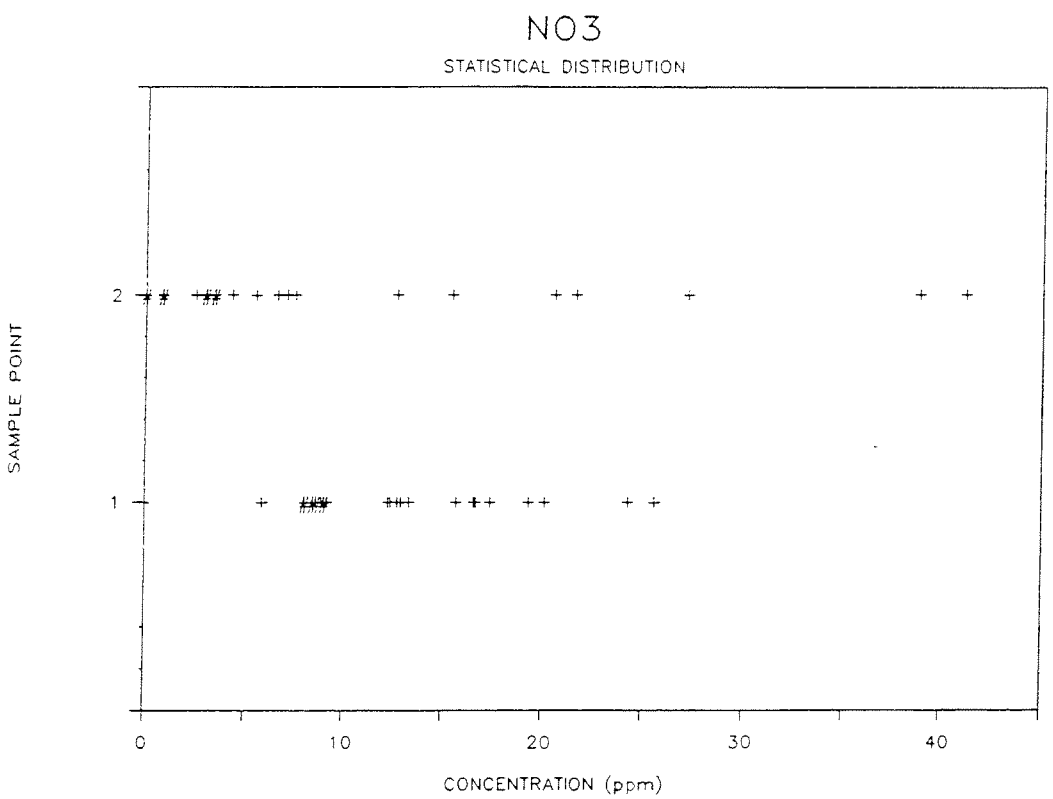


LAW/CRANDALL, INC.

004255

JOB 2 ... DATE 1/3 ... DR. ... O.E. ... CHKD.

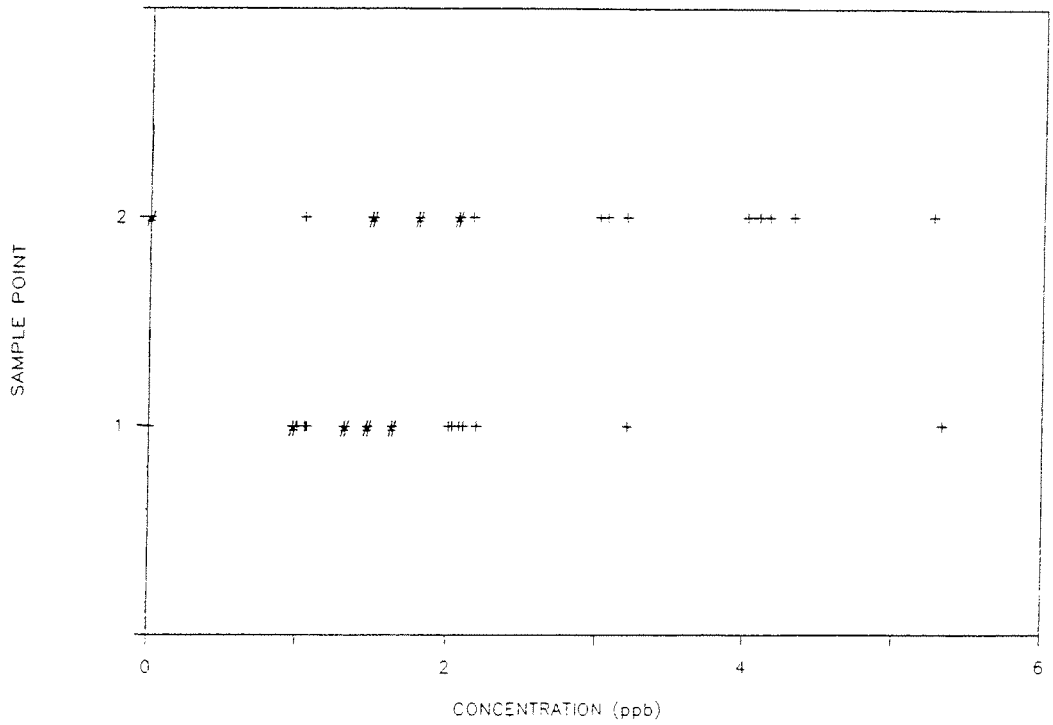


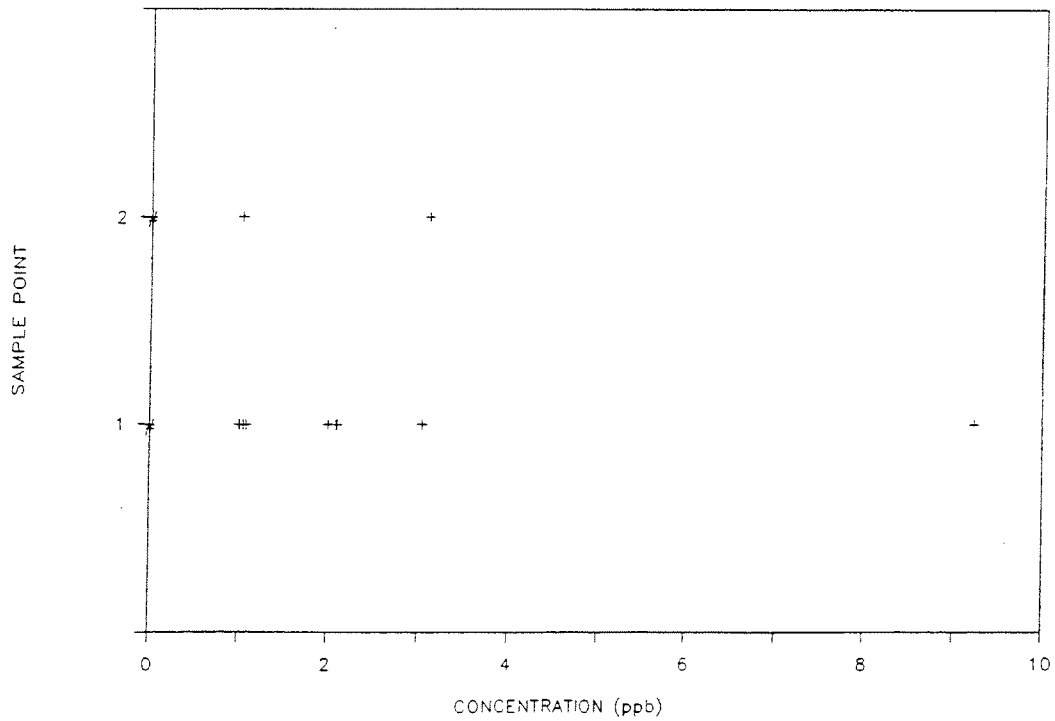


FORM 120

LAW/CRANDALL, INC.

004256





LAW/CRANDALL, INC.

JOB ... DATE ... DR. ... O.E. ... CHKD.

FORM 120

APPENDIX F

RESULTS OF LABORATORY ANALYSIS
AND
CHAIN-OF-CUSTODY RECORD

CONFIDENTIAL

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed: 4-20 '93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	190	260
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	190	260
Calcium (6010), mg/L	26	72
Magnesium (6010), mg/L	19	17
Chloride (325.3), mg/L	19	18
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.82	0.20
Manganese (6010), mg/L	0.064	<0.01
pH (150.1/9040), Units	8.1	7.6
Potassium (6010), mg/L	4.7	4.6
Sodium (6010), mg/L	34	29
Sulfate (375.4), mg/L	24	35
Conductivity (120.1), umhos/cm	410	590
Filterable Residue, TDS (160.1), mg/L	190	330
Zinc (6010), mg/L	3.5	0.37
Ion Balance, Percent	3.86	1.45

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CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Nitrate (353.2)		
Nitrate (as N), mg/L	<0.05	1.8
Nitrate (as NO3), mg/L	<0.2	8.0
Digestion (3005), Date	04/05/93	04/05/93
Aluminum (6010), mg/L	<0.1	<0.1
Fluoride (340.2), mg/L	0.28	0.43
Furnace Digestion (3020), Date	04/07/93	04/07/93
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.087	0.069
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	0.005	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.049	0.0048
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
Cyanide (9010), mg/L	<0.02	<0.02
COD (410.4), mg/L	<6	<6
Phenolics (9065), mg/L	<0.05	<0.05

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004260

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2	
B/N,A Ext.Pri.Poll. (EPA 8270)			
Date Analyzed	04/08/93	04/08/93	
Date Extracted	04/06/93	04/06/93	
Dilution Factor, Times	1	1	
1,2,4-Trichlorobenzene, ug/L	<5	<5	
1,2-Dichlorobenzene, ug/L	<6	<6	
1,2-Diphenylhydrazine, ug/L	<5	<5	
1,3-Dichlorobenzene, ug/L	<5	<5	
1,4-Dichlorobenzene, ug/L	<5	<5	
2,4,5-Trichlorophenol, ug/L	<6	<6	
2,4,6-Trichlorophenol, ug/L	<5	<5	
2,4-Dichlorophenol, ug/L	<5	<5	
2,4-Dimethylphenol, ug/L	<5	<5	
2,4-Dinitrophenol, ug/L	<5	<5	
2,4-Dinitrotoluene, ug/L	<5	<5	
2,6-Dinitrotoluene, ug/L	<5	<5	
2-Chloronaphthalene, ug/L	<6	<6	
2-Chlorophenol, ug/L	<5	<5	
2-Methyl-4,6-dinitrophenol, ug/L	<5	<5	
2-Methylnaphthalene, ug/L	<5	<5	
2-Methylphenol (o-Cresol), ug/L	<5	<5	
2-Nitroaniline, ug/L	<5	<5	
2-Nitrophenol, ug/L	<5	<5	
3,3'-Dichlorobenzidine, ug/L	<20	<20	
3-Nitroaniline, ug/L	<5	<5	
4-Bromophenylphenylether, ug/L	<5	<5	
4-Chloro-3-methylphenol, ug/L	<5	<5	

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B C Analytical

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818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2	
4-Chloroaniline, ug/L	<5	<5	
4-Chlorophenylphenylether, ug/L	<5	<5	
4-Methylphenol (p-Cresol), ug/L	<8	<8	
4-Nitroaniline, ug/L	<6	<6	
4-Nitrophenol, ug/L	<5	<5	
Acenaphthene, ug/L	<5	<5	
Acenaphthylene, ug/L	<5	<5	
Aniline, ug/L	<5	<5	
Anthracene, ug/L	<5	<5	
Benzidine, ug/L	<200	<200	
Benzo(a)anthracene, ug/L	<5	<5	
Benzo(a)pyrene, ug/L	<5	<5	
Benzo(b)fluoranthene, ug/L	<5	<5	
Benzo(g,h,i)perylene, ug/L	<5	<5	
Benzo(k)fluoranthene, ug/L	<5	<5	
Benzyl Alcohol, ug/L	<5	<5	
Benzoic acid, ug/L	<50	<50	
Butylbenzylphthalate, ug/L	<5	<5	
Chrysene, ug/L	<5	<5	
Di-n-octylphthalate, ug/L	<5	<5	
Dibenzo(a,h)anthracene, ug/L	<5	<5	
Dibenzofuran, ug/L	<5	<5	
Dibutylphthalate, ug/L	<5	<5	
Diethylphthalate, ug/L	<5	<5	
Dimethylphthalate, ug/L	<5	<5	
Fluoranthene, ug/L	<5	<5	
Fluorene, ug/L	<5	<5	

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CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2	
Hexachlorobenzene, ug/L	<5	<5	
Hexachlorobutadiene, ug/L	<5	<5	
Hexachlorocyclopentadiene, ug/L	<5	<5	
Hexachloroethane, ug/L	<5	<5	
Indeno(1,2,3-c,d)pyrene, ug/L	<7	<7	
Isophorone, ug/L	<5	<5	
N-Nitrosodimethylamine, ug/L	<6	<6	
N-Nitrosodiphenylamine, ug/L	<5	<5	
N-Nitrosodi-n-propylamine, ug/L	<6	<6	
Nitrobenzene, ug/L	<5	<5	
Naphthalene, ug/L	<5	<5	
Phenanthrene, ug/L	<5	<5	
Phenol, ug/L	<5	<5	
Pentachlorophenol, ug/L	<5	<5	
Pyrene, ug/L	<5	<5	
Bis(2-chloroethoxy)methane, ug/L	<5	<5	
Bis(2-chloroethyl)ether, ug/L	<5	<5	
Bis(2-chloroisopropyl)ether, ug/L	<6	<6	
Bis(2-ethylhexyl)phthalate, ug/L	<7	<7	
Dioxin Screen, ug/L	<5	<5	

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Received: 02 APR 93

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200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Pesticides/PCBs (EPA 8080)		
Date Analyzed	04/06/93	04/06/93
Date Extracted	04/05/93	04/05/93
Dilution Factor, Times	1	1
Aldrin, ug/L	<0.04	<0.04
Chlordane, ug/L	<0.4	<0.4
p,p'-DDD, ug/L	<0.04	<0.04
p,p'-DDE, ug/L	<0.04	<0.04
p,p'-DDT, ug/L	<0.04	<0.04
Dieldrin, ug/L	<0.05	<0.05
Endosulfan I, ug/L	<0.05	<0.05
Endosulfan II, ug/L	<0.05	<0.05
Endosulfan sulfate, ug/L	<0.1	<0.1
Endrin, ug/L	<0.05	<0.05
Endrin aldehyde, ug/L	<0.04	<0.04
Heptachlor epoxide, ug/L	<0.05	<0.05
Heptachlor, ug/L	<0.03	<0.03
Methoxychlor, ug/L	<0.05	<0.05
Aroclor 1016, ug/L	<1	<1
Aroclor 1221, ug/L	<1	<1
Aroclor 1232, ug/L	<1	<1
Aroclor 1242, ug/L	<1	<1
Aroclor 1248, ug/L	<1	<1
Aroclor 1254, ug/L	<1	<1
Aroclor 1260, ug/L	<1	<1
Aroclor 1262, ug/L	<1	<1
Toxaphene, ug/L	<0.5	<0.5

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
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LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
BHC, alpha isomer, ug/L	<0.03	<0.03
BHC, beta isomer, ug/L	<0.04	<0.04
BHC, delta isomer, ug/L	<0.04	<0.04
BHC, gamma isomer (Lindane), ug/L	<0.04	<0.04

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Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Halocarbons/EPA 8010		
Date Analyzed	04/15/93	04/15/93
Date Confirmed	04/15/93	04/15/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<3	<3
Freon 113, ug/L	<1	<1
Methylene chloride, ug/L	<0.5	<0.5

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Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2			
Trichloroethene, ug/L	0.90	<0.5			
Trichlorofluoromethane, ug/L	<0.5	<0.5			
Tetrachloroethene, ug/L	<0.5	1.6			
Vinyl chloride, ug/L	<0.5	<0.5			
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5			
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5			
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5			
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5			

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B C Analytical

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LOG NO: G93-04-025

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Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Vol.Pri.Poll. (EPA 8240)		
Date Analyzed	04/06/93	04/06/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1
Chloromethane, ug/L	<1	<1

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B C Analytical

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LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-025-1	4928 B	02 APR 93
04-025-2	4928 A	02 APR 93

PARAMETER	04-025-1	04-025-2
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	<1	1.3
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<1	<1
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA 8240)	---	---

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
04-025-3	Trip Blank #30401	

PARAMETER	04-025-3
Sample Held, Not Analyzed	HOLD

James C. Hein, Laboratory Director

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-1
Sample Description: 4928 B

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	<0.2	<0.0032
Chloride (325.3)	19	0.54
Sulfate (375.4)	24	0.5
Bicarbonate (as HCO3)	230	3.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		4.9

Cations	mg/L	meq/L
Magnesium (6010)	19	1.6
Sodium (6010)	34	1.5
Potassium (6010)	4.7	0.12
Calcium (6010)	26	1.3
Total Millequivalents per Liter		4.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	190
Ca Hardness (as CaCO3)	65
Mg Hardness (as CaCO3)	78
Total Hardness	143
Iron (6010)	0.82
Manganese (6010)	0.064
Copper (6010)	<0.02
Zinc (6010)	3.5
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	190
Sp. Conductance, umhos/cm	410
pH (150.1/9040), units	8.1
Ion balance in percent	3.86

* Conforms to Title 22, California Administrative Code

BCA

004271

CONFIDENTIAL

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-04-025

Received: 02 APR 93

Mailed:

Bill O' Braitis
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346

REPORT OF ANALYTICAL RESULTS

Log Number : 93-04-025-2
Sample Description: 4928 A

General Mineral Analysis
Sampled Date 02 APR 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.0	0.13
Chloride (325.3)	18	0.51
Sulfate (375.4)	35	0.73
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.6

Cations	mg/L	meq/L
Magnesium (6010)	17	1.4
Sodium (6010)	29	1.3
Potassium (6010)	4.6	0.12
Calcium (6010)	72	3.6
Total Millequivalents per Liter		6.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	260
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	70
Total Hardness	250
Iron (6010)	0.20
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.37
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	330
Sp. Conductance, umhos/cm	590
pH (150.1/9040), units	7.6
Ion balance in percent	1.45

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

004272

CHAIN OF CUSTODY RECORD

BCA Log Number 93-04-025

Client name: Law/Crandall, Inc.	Project or PO#: 2702.20396
Address: 200 N. Citadel Dr.	Phone #: (213) 889-5300
City, State, Zip: Los Angeles CA 90040	Report attention: B. D'Braitis

Sampled by: Martine Alter

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	601	Dioxin-Screen	625 + 624	POH + CCD	CAM + Nitrate	Metals	Cyanide	Hazardous sample Special handling required HOLD	Remarks
	4-2-93	10:00	GW	4928B	13	X	X	X	X	X	X	X		Run 624 first.
	4-2-93	1:00	GW	4928A	13	X	X	X	X	X	X	X		If ND please
	4-2-93	—	BW	Trip Blank * 30401	2								X	run for 601/602
														to get lower DL
														CSM 4-2-93

	Signature	Print Name	Company	Date	Time
Relinquished by:	Martine Alter	Martine Alter	Law/Crandall, Inc.	4-2-93	1:49
Received by:	Jin Wang	LOKI WONG	BCA	4/2/93	1:50
Relinquished by:					
Received by:					
Relinquished by:					
Received by Laboratory:					

BC ANALYTICAL

- ☐ 1256 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☑ 601 Western Avenue, Glendale, CA 91201 (818) 247-6737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

00427

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B C Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed: JUL 8 1993

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-06-364-1
Sample Description: 4928B

General Mineral Analysis
Sampled Date 22 JUN 93

Anions	mg/L	meq/L
Nitrate (as NO3)	0.78	0.013
Chloride (325.3)	22	0.62
Sulfate (375.4)	46	0.96
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		7.6

Cations	mg/L	meq/L
Magnesium (6010)	26	2.1
Sodium (6010)	39	1.7
Potassium (6010)	6.2	0.16
Calcium (6010)	70	3.5
Total Millequivalents per Liter		7.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	110
Total Hardness	280
Iron (6010)	14
Manganese (6010)	0.53
Copper (6010)	<0.02
Zinc (6010)	3.7
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	410
Sp. Conductance, umhos/cm	690
pH (150.1/9040), units	7.0
Ion balance in percent	1.14

* Conforms to Title 22, California Administrative Code

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B C Analytical

861 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-06-364-2
Sample Description: 4928A

General Mineral Analysis
Sampled Date 22 JUN 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.3	0.13
Chloride (325.3)	18	0.51
Sulfate (375.4)	48	1
Bicarbonate (as HCO3)	290	4.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.5

Cations	mg/L	meq/L
Magnesium (6010)	18	1.5
Sodium (6010)	29	1.3
Potassium (6010)	4.5	0.12
Calcium (6010)	72	3.6
Total Millequivalents per Liter		6.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	240
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	74
Total Hardness	254
Iron (6010)	0.12
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.25
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	370
Sp. Conductance, umhos/cm	610
pH (150.1/9040), units	7.5
Ion balance in percent	0.30

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

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ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Furnace Digestion (3020), Date	06/28/93	06/28/93
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	300	240
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	300	240
Calcium (6010), mg/L	70	72
Magnesium (6010), mg/L	26	18
Chloride (325.3), mg/L	22	18
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	14	0.12
Manganese (6010), mg/L	0.53	<0.01
pH (150.1/9040), Units	7.0	7.5
Potassium (6010), mg/L	6.2	4.5
Sodium (6010), mg/L	39	29
Sulfate (375.4), mg/L	46	48
Conductivity (120.1), umhos/cm	690	610
Filterable Residue, TDS (160.1), mg/L	410	370
Zinc (6010), mg/L	3.7	0.25
Ion Balance, Percent	1.14	0.30

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B C Analytical

801 Western Avenue
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818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Nitrate (353.2)		
Nitrate (as N), mg/L	0.18	1.9
Nitrate (as NO3), mg/L	0.78	8.3
Digestion (3010), Date	06/28/93	06/28/93
Aluminum (6010), mg/L	0.19	<0.1
Fluoride (340.2), mg/kg	0.25	0.49
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.12	0.077
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	0.0010	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.024	0.0028
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
COD (410.4), mg/L	7.2	7.7

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2
Vol.Pri.Poll. (EPA 8240)		
Date Analyzed	07/01/93	07/01/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1

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Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-364-1	4928B	22 JUN 93
06-364-2	4928A	22 JUN 93

PARAMETER	06-364-1	06-364-2	
Chloromethane, ug/L	<1	<1	
Carbon Disulfide, ug/L	<2	<2	
Dibromochloromethane, ug/L	<1	<1	
Ethylbenzene, ug/L	<1	<1	
Freon 113, ug/L	<2	<2	
Methyl ethyl ketone, ug/L	<5	<5	
Methyl isobutyl ketone, ug/L	<5	<5	
Methylene chloride, ug/L	<1	<1	
Styrene, ug/L	<1	<1	
Trichloroethene, ug/L	<1	<1	
Trichlorofluoromethane, ug/L	<1	<1	
Toluene, ug/L	<1	<1	
Tetrachloroethene, ug/L	1.7	1.4	
Vinyl acetate, ug/L	<10	<10	
Vinyl chloride, ug/L	<1	<1	
Total Xylene Isomers, ug/L	<3	<3	
cis-1,2-Dichloroethene, ug/L	<1	<1	
cis-1,3-Dichloropropene, ug/L	<1	<1	
trans-1,2-Dichloroethene, ug/L	<1	<1	
trans-1,3-Dichloropropene, ug/L	<1	<1	
Other Vol.Pri.Poll. (EPA 8240)	---	---	

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-06-364

Received: 22 JUN 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

James C. Hein, Laboratory Director

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BC ANALYTICAL

BATCH QC REPORT
ORDER: G9306364

DATE REPORTED : 07/08/93

MATRIX QC PRECISION (DUPLICATES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE %DIFF
pH (150.1/9040)	06.22.93	93311	7.0	7.0	Units	0
Conductivity (120.1)	06.28.93	9358	750	710	umhos/cm	5
Conductivity (120.1)	06.28.93	9358	850	860	umhos/cm	1
COD (410.4)	06.24.93	93209	7.2	7.2	mg/L	0

CHAIN OF CUSTODY RECORD

BCA Log Number G93-06-364

Client name LAW/Crandall		Project or PO# 7702.70346.1	
Address 700 Citrus Ln.		Phone # (713) 864-5100	
City, State, Zip LA Co. 70040		Report attention LA Sample	

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	Analyses required: G, N, M	G, T, H	Diesel	COD			Hazardous sample / Special handling required	Remarks
	6.22.93	11:30	GW	4994B	5	X	X	X	X	X			Send RSK TO:
	1	1045	GW	4995A	5	X	X		X	X			LA Co. Pacific
													1510 E. 25th St
													LA Co. 70058
													ATTN: Mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	LA Sample	Randy A. Sampler	LAW/Crandall	6/22/93	
Received by lab	Susan Arrowsmith	S. ARROWSMITH	BC Analytical	6/22/93	12:00
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

00428

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed: SEP 7 1993

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-08-327-1
Sample Description: 4928B

General Mineral Analysis
Sampled Date 24 AUG 93

Anions	mg/L	meq/L
Nitrate (as NO3)	3.4	0.055
Chloride (325.3)	17	0.48
Sulfate (375.4)	46	0.96
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		7.5

Cations	mg/L	meq/L
Magnesium (6010)	22	1.8
Sodium (6010)	32	1.4
Potassium (6010)	5.0	0.13
Calcium (6010)	82	4.1
Total Millequivalents per Liter		7.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	200
Mg Hardness (as CaCO3)	90
Total Hardness	290
Iron (6010)	17
Manganese (6010)	0.40
Copper (6010)	<0.02
Zinc (6010)	4.6
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	390
Sp. Conductance, umhos/cm	680
pH (150.1/9040), units	6.5
Ion balance in percent	0.70

* Conforms to Title 22, California Administrative Code

BCA

004283

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

Log Number : 93-08-327-2
Sample Description: 4928A

General Mineral Analysis
Sampled Date 24 AUG 93

Anions	mg/L	meq/L
Nitrate (as NO3)	8.2	0.13
Chloride (325.3)	17	0.48
Sulfate (375.4)	48	1
Bicarbonate (as HCO3)	290	4.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.5

Cations	mg/L	meq/L
Magnesium (6010)	18	1.5
Sodium (6010)	30	1.3
Potassium (6010)	4.6	0.12
Calcium (6010)	73	3.6
Total Millequivalents per Liter		6.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	240
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	74
Total Hardness	254
Iron (6010)	0.17
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.25
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	340
Sp. Conductance, umhos/cm	610
pH (150.1/9040), units	7.1
Ion balance in percent	0.53

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G93-08-327

Received: 24 AUG 93

Mailed:

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Furnace Digestion (3020), Date	08/30/93	08/30/93
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	300	240
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	300	240
Calcium (6010), mg/L	82	73
Magnesium (6010), mg/L	22	18
Chloride (325.3), mg/L	17	17
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	17	0.17
Manganese (6010), mg/L	0.40	<0.01
pH (150.1/9040), Units	6.5	7.1
Potassium (6010), mg/L	5.0	4.6
Sodium (6010), mg/L	32	30
Sulfate (375.4), mg/L	46	48
Conductivity (120.1), umhos/cm	680	610
Filterable Residue, TDS (160.1), mg/L	390	340
Zinc (6010), mg/L	4.6	0.25
Ion Balance, Percent	0.70	0.53

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801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Nitrate (353.2)		
Nitrate (as N), mg/L	0.77	1.8
Nitrate (as NO3), mg/L	3.4	8.2
Digestion (3010), Date	08/30/93	08/30/93
Aluminum (6010), mg/L	0.28	<0.1
Fluoride (340.2), mg/L	0.38	0.47
Arsenic (7060), mg/L	<0.002	<0.002
Antimony (6010), mg/L	<0.06	<0.06
Barium (6010), mg/L	0.13	0.079
Beryllium (6010), mg/L	<0.002	<0.002
Cadmium (7131), mg/L	<0.001	<0.001
Chromium (7191), mg/L	<0.005	<0.005
Cobalt (6010), mg/L	<0.04	<0.04
Lead (7421), mg/L	0.018	0.0042
Mercury (EPA 7470), mg/L	<0.0002	<0.0002
Molybdenum (6010), mg/L	<0.04	<0.04
Nickel (6010), mg/L	<0.04	<0.04
Selenium (7740), mg/L	<0.004	<0.004
Silver (6010), mg/L	<0.01	<0.01
Thallium (6010), mg/L	<0.4	<0.4
Vanadium (6010), mg/L	<0.04	<0.04
COD (410.4), mg/L	<6	<6

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Vol.Pri.Poll. (EPA-8240)		
Date Analyzed	08/31/93	08/31/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	<1	<1
1,1-Dichloroethene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<5	<5
Acetone, ug/L	<20	<20
Acrolein, ug/L	<50	<50
Acrylonitrile, ug/L	<50	<50
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Chloroform, ug/L	<1	<1

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

CONFIDENTIAL

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-327-1	4928B	24 AUG 93
08-327-2	4928A	24 AUG 93

PARAMETER	08-327-1	08-327-2
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<2	<2
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<2	<2
Methyl ethyl ketone, ug/L	<5	<5
Methyl isobutyl ketone, ug/L	<5	<5
Methylene chloride, ug/L	<1	<1
Styrene, ug/L	<1	<1
Trichloroethene, ug/L	<1	<1
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Tetrachloroethene, ug/L	2.0	1.3
Vinyl acetate, ug/L	<10	<10
Vinyl chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<3	<3
cis-1,2-Dichloroethene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
trans-1,2-Dichloroethene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1
Other Vol.Pri.Poll. (EPA-8240)	---	---

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-08-327

Received: 24 AUG 93

Mr. Randy A. Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.1

REPORT OF ANALYTICAL RESULTS

James C. Hein, Laboratory Director

CHAIN OF CUSTODY RECORD

BCA Log Number 93-08-327

Client name	Law/Crandall	Project or PO#	2702.20346.1
Address	200 Citadel Dr	Phone #	(213) 889-5300
City, State, Zip	LA Ca 90040	Report attention	RA Scroggins

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: Randy A. Scroggins Sample description	Number of containers	Gen. Min	COD	624	Metals	Hazardous sample Special handling required	Remarks
	8.24.93	1500	GW	4928B	6	1	1	1	1		Send Bill To:
		1530	GW	4928A	6	1	1	1	1		LA By-Products
											1810 E. 25th St.
											LA Ca 90058
											ATTN: Mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	Law/Crandall	8.24.93	1555
Received by Lab	Susan Arrowsmith	S. ARROWSMITH	BC Analytical	8/24/93	15 55
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

☐ [illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

004290

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ANALYTICAL REPORT

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mailed: DEC 8 1993

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
Furnace Digestion (3020), Date	11/30/93	11/30/93
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	240	300
Hydroxide Alk (as CaCO3), mg/L	<1	<1
Total Alkalinity (as CaCO3), mg/L	240	300
Calcium (6010), mg/L	69	93
Magnesium (6010), mg/L	17	25
Chloride (325.3), mg/L	19	20
Copper (6010), mg/L	<0.02	<0.02
Surfactants, MBAS (425.1), mg/L	<0.1	<0.1
Iron (6010), mg/L	0.13	82
Manganese (6010), mg/L	<0.01	3.8
pH (150.1/9040), Units	7.4	7.1
Potassium (6010), mg/L	4.5	5.5
Sodium (6010), mg/L	29	37
Sulfate (375.4), mg/L	47	120
Conductivity (120.1), umhos/cm	600	690
Filterable Residue, TDS (160.1), mg/L	350	400
Zinc (6010), mg/L	0.21	3.0
Ion Balance, Percent	2.04	4.0

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
Nitrate (353.2)		
Nitrate (as N), mg/L	1.7	0.61
Nitrate (as NO3), mg/L	7.7	2.7
Digestion (3010), Date	11/30/93	11/30/93
Aluminum (6010), mg/L	<0.1	1.1
Fluoride (340.2), mg/L	0.64	0.36
COD (410.4), mg/L	<6	<6
Cadmium (7131), mg/L	<0.001	<0.001
Chromium (6010), mg/L	<0.01	<0.01
Lead (7421), mg/L	0.0031	0.0028
Nickel (6010), mg/L	<0.04	<0.04

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
EPA 8020		
Date Analyzed	11/24/93	11/24/93
Date Confirmed	11/24/93	11/24/93
Dilution Factor, Times	1	1
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5
Toluene, ug/L	<0.5	<0.5
Total Xylene Isomers, ug/L	<1	<1

BCA

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
Halocarbons/EPA 8010		
Date Analyzed	11/24/93	11/24/93
Date Confirmed	11/24/93	11/24/93
Dilution Factor, Times	1	1
1,1,1-Trichloroethane, ug/L	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5
1,1,2-Trichloroethane, ug/L	<0.5	<0.5
1,1-Dichloroethane, ug/L	<0.5	0.52
1,1-Dichloroethene, ug/L	<0.5	<0.5
1,2-Dichloroethane, ug/L	<0.5	<0.5
1,2-Dichlorobenzene, ug/L	<0.5	<0.5
1,2-Dichloropropane, ug/L	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5
2-Chloroethylvinylether, ug/L	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5
Carbon Tetrachloride, ug/L	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5
Chloroform, ug/L	<0.5	<0.5
Chloromethane, ug/L	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5
Dichlorodifluoromethane, ug/L	<3	<3
Freon 113, ug/L	<1	1.2

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
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LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-279-1	4928A	18 NOV 93
11-279-2	4928B	18 NOV 93

PARAMETER	11-279-1	11-279-2
Methylene chloride, ug/L	<0.5	<0.5
Trichloroethene, ug/L	<0.5	<0.5
Trichlorofluoromethane, ug/L	<0.5	1.4
Tetrachloroethene, ug/L	0.92	1.4
Vinyl chloride, ug/L	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5

James C. Hein, Laboratory Director

BCA

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

Log Number : 93-11-279-1
Sample Description: 4928A

General Mineral Analysis
Sampled Date 18 NOV 93

Anions	mg/L	meq/L
Nitrate (as NO3)	7.7	0.12
Chloride (325.3)	19	0.54
Sulfate (375.4)	47	0.98
Bicarbonate (as HCO3)	290	4.8
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		6.5

Cations	mg/L	meq/L
Magnesium (6010)	17	1.4
Sodium (6010)	29	1.3
Potassium (6010)	4.5	0.12
Calcium (6010)	69	3.4
Total Millequivalents per Liter		6.2

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	240
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	70
Total Hardness	240
Iron (6010)	0.13
Manganese (6010)	<0.01
Copper (6010)	<0.02
Zinc (6010)	0.21
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	350
Sp. Conductance, umhos/cm	600
pH (150.1/9040), units	7.4
Ion balance in percent	2.04

* Conforms to Title 22, California Administrative Code

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B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-279

Received: 19 NOV 93

Mr. Randy Scroggins
Law/Crandall, Inc.
200 Citadel Drive
Los Angeles, California 90040

Project: 2702.20346.0001

REPORT OF ANALYTICAL RESULTS

Log Number : 93-11-279-2
Sample Description: 4928B

General Mineral Analysis
Sampled Date 18 NOV 93

Anions	mg/L	meq/L
Nitrate (as NO3)	2.7	0.044
Chloride (325.3)	20	0.56
Sulfate (375.4)	120	2.5
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Hydroxide (as OH)	<0.34	<0.02
Total Millequivalents per Liter		9.1

Cations	mg/L	meq/L
Magnesium (6010)	25	2.1
Sodium (6010)	37	1.6
Potassium (6010)	5.5	0.14
Calcium (6010)	93	4.6
Total Millequivalents per Liter		8.4

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	230
Mg Hardness (as CaCO3)	100
Total Hardness	330
Iron (6010)	82
Manganese (6010)	3.8
Copper (6010)	<0.02
Zinc (6010)	3.0
Surfactants, MBAS (425.1)	<0.1
Filterable Residue, TDS (	400
Sp. Conductance, umhos/cm	690
pH (150.1/9040), units	7.1
Ion balance in percent	4.00

* Conforms to Title 22, California Administrative Code

James C. Hein, Laboratory Director

BCA

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CHAIN OF CUSTODY RECORD

BCA Log Number 693-11-279

Client name: LAW/Crandall	Project or PO#: 2702.20366.1
Address: 200 Citadel Dr	Phone #: (213) 889-5300
City, State, Zip: LA Ca 90040	Report attention: RA Scroggins
Sampled by: Randy A. Scroggins	

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Gen. min.	Metals	601/602	COD				Hazardous sample Special handling required	Remarks
	11-18-93	12:00	GW	4928A	4	X	X	X	X					Sand Bill no:
	/	12:30	/	4928B	4	X	X	X	X					LA By-Products
														1810 E. 25th St.
														LA Ca. 90058
														ATTN: Mike McAllister

	Signature	Print Name	Company	Date	Time
Relinquished by	RA Scroggins	Randy A. Scroggins	LAW/Crandall	11-19-93	13:05
Received by	Jim Wong	Jim Wong	BCA	11/19/93	1:10P
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

B C ANALYTICAL

☐ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300

☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

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LAW/CRANDALL, INC.

geotechnical, environmental & construction materials consultants

1992 ANNUAL REPORT

GROUND WATER MONITORING

STRATHERN LANDFILL

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared for

Los Angeles By-Products Company

January 27, 1993

Law/Crandall Project No. 2702.20346.0001

004299

of November 9 through 14, 1992. Ground water elevations were measured in all three wells, but were still too low to allow pumps to hold suction and bring water to the surface.

After the heavy rains in December and early January, ground water measurements by Los Angeles By-Products and Law/Crandall personnel showed that water levels have not yet risen. Los Angeles By-Products Company and Law/Crandall, Inc., will continue to monitor ground water levels in anticipation that water levels will rise in response to the heavy winter rains.

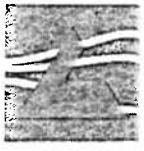
SCOPE AND LIMITATIONS

Law/Crandall, Inc. measures ground water levels, collects ground water samples, analyzes the laboratory results and prepares monitoring reports for the Los Angeles By-Products Company's Strathern Landfill. This monitoring report is required by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region under the provisions of the Waste Discharge Requirement (WDR) Order No. 91-086 and Monitoring and Reporting Program (MRP) No. 7055.

The registered geologists who prepared this report have a minimum of 10 years experience. Our findings and recommendations were prepared according to generally accepted professional principles and practices used by similar consulting firms in this or similar areas. Any use, interpretation, or emphasis other than that contained here, is done at the reader's own risk.

BACKGROUND

This section presents additional data including a description of the site, the monitoring requirements, and the ground water monitoring well network.



Site Description

Los Angeles By-Products Company operates the Strathern Landfill located at 11201 Strathern Street, Sun Valley District, Los Angeles County, California. The landfill accepts inert wastes consisting of uncontaminated soils, broken concrete, bricks, aggregates, and plasterboard. The site covers 34.7 acres and has capacity of 6,907,000 cubic yards. Strathern Landfill is located adjacent to Penrose and Newberry Landfills. Figure 1 shows the general site location.

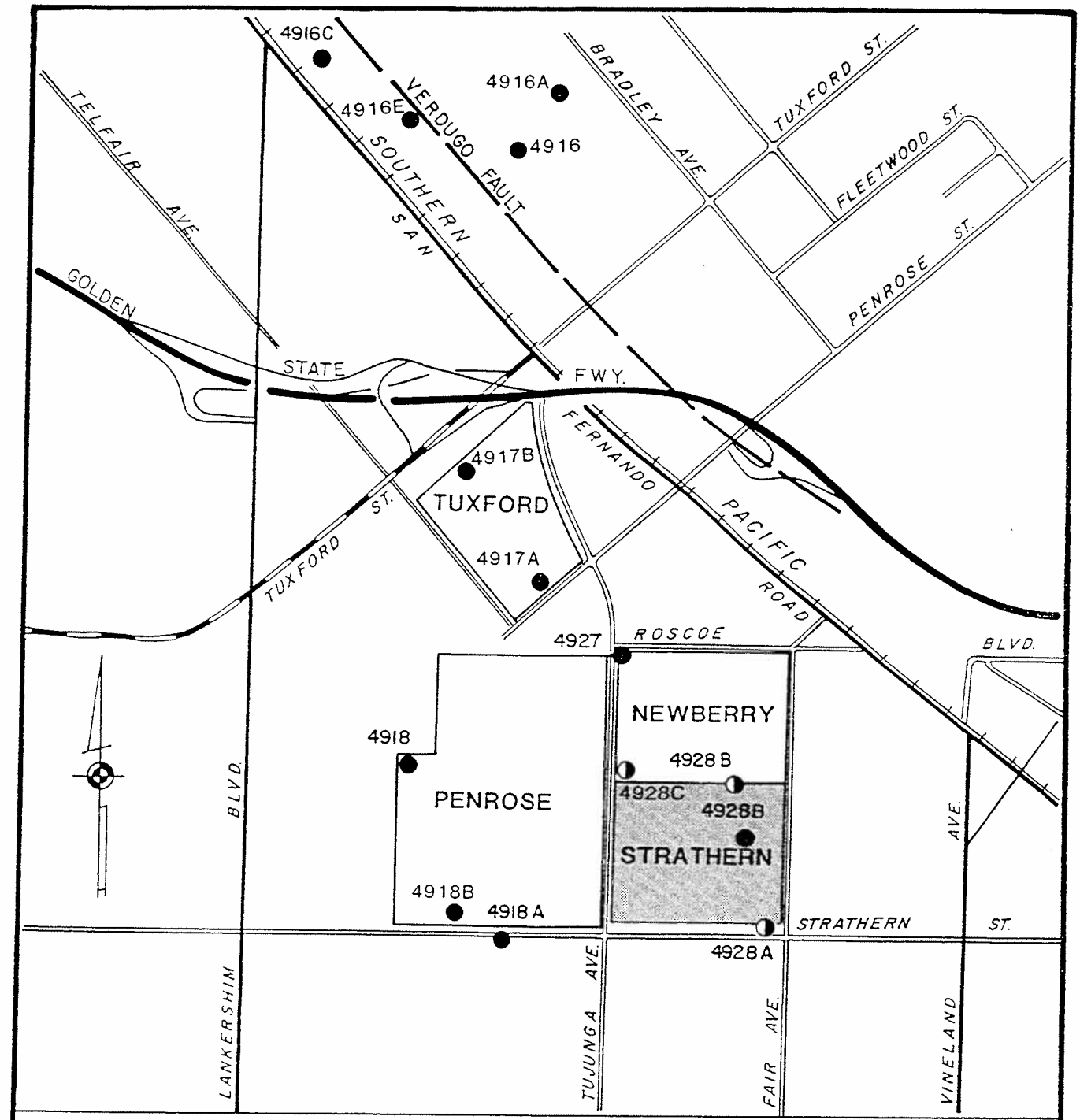
Monitoring Requirements

The site is monitored to satisfy the requirements of the Monitoring and Reporting Program (MRP) adopted by the RWQCB on December 2, 1991. The MRP requires quarterly reporting on ground water quality. This report covers this requirement for the annual and fourth quarter of 1992.

Monitoring consists of measuring ground water levels and collecting ground water samples. Appendix A contains the ground water sampling protocol.

Monitoring Well Network

The ground water monitoring well network for the site consists of three wells. Figure 1 shows the monitoring well locations. Table 1 presents monitoring well construction details.



EXPLANATION:

4918A● MONITORING WELL LOCATION AND NUMBER

4928A◑ MONITORING WELL IN NETWORK

REFERENCE:

BASE MAP FROM U.S.G.S. 7.5' BURBANK (1972) AND VAN NUYS (1972) QUADRANGLES.

0 1000 2000

SCALE IN FEET

MONITORING WELL NETWORK

STRATHERN LANDFILL
SUN VALLEY, CALIFORNIA

LAW/CRANDALL, INC.

FIGURE 1

TABLE 1

MONITORING WELL CONSTRUCTION DETAILS

WELL NO.	OWNER	LAND SURFACE ELEVATION (feet asl)	TOTAL DEPTH (ft)	SCREEN INTERVAL (ft)
4928A	L.A. By-Products	803.78	433	225-433
4928B	L.A. By-Products	823.09	362	161-362
4928C	L.A. By-Products	823.37	377	160-375

CONCLUSIONS

Because the site receives only solid inert waste from a small group of disposers, the amount of water-soluble material is negligible and the potential for contamination is low. Law/Crandall, Inc., will continue to measure ground water levels at Strathern Landfill. We anticipate that ground water levels will rise in response to the heavy winter rains and ground water samples will be collected from the wells as soon as possible.

-oOo-

We appreciate working with you on this project. If you have any questions regarding this report, please contact Alice Campbell at (213) 889-5300.

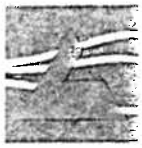
Sincerely,

LAW/CRANDALL, INC.

William J. O'Braitis
Staff Geologist

Alice Campbell, C.E.G. 1157
Principal Hydrogeologist

WJO/ks/20346A92.RPT
Attachments



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APPENDIX A

GROUND WATER SAMPLING PROTOCOL

SAMPLING PROTOCOL

This appendix describes procedures to be used for measuring water levels, collecting ground water samples, sample preservation, identification and delivery to the laboratory.

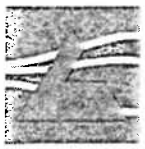
Water Level Measurements

Before sampling, the water level in the monitoring wells shall be measured and the measurement recorded on appropriate data forms. The water level shall be measured with a calibrated electric water level sensor to the nearest 0.01 foot. The sensor shall be cleaned before each measurement so that cross-contamination between wells cannot occur. The depth to the water level shall be referenced to the top of the well casing or established reference point. Data to be recorded shall include:

1. Monitoring well number;
2. Date and time of measurement;
3. Name of person making the measurement; and
4. Any pertinent remarks related to conditions that affect the measured level.

Equipment Cleaning

All equipment must be handled in a manner that will minimize cross-contamination between monitoring wells and between the depth zones to be sampled within the wells. All equipment that comes in contact with well water must be cleaned before and after sample collection. The equipment should be cleaned with a non-phosphate detergent/soap mixture. The first rinse shall be of tap water and the final one of distilled water. The sampling equipment should be thoroughly dried before use so that the residual cleaning agents are not carried over to the sample. Upgradient wells shall be sampled first, and then the downgradient wells.



Sample Containers

Sample containers shall be prepared in advance by the laboratory that will perform sample analyses. If other containers are used, they shall be new and prepared in accordance with the approved EPA procedure. Sample and shipping containers shall be stored in a clean environment before use. Caps shall not be removed until the water sample is to be poured into its appropriate container.

Filling Sample Containers

Ground water samples shall be collected in the following order of volatilization sensitivity:

1. Volatile organics
2. Purgeable organics
3. Chemical oxygen demand
4. Extractable organics
5. Dissolved metals
6. General minerals

Sample Preservation

Samples shall be preserved in accordance with EPA procedures. The appropriate amount of chemical preservatives, if any, shall be added to the sample containers before delivery to sampling sites. Electrical conductivity, pH, temperature, alkalinity, and CO_2 all change rapidly and must be measured and recorded in the field.

Samples shall be preserved in the field immediately after sample collection by placing the samples in an insulated ice chest containing ice bags. Particular care should be taken so that sample labels are not damaged by water. The samples must be kept at approximately four degrees Centigrade during transport to the laboratory and must be kept refrigerated in the lab until analysis is complete.

Sample Identification and Chain of Custody

Each sample shall be identified by attaching a pressure-sensitive gummed label or standardized tag on the container(s), not lids. This label shall contain the sample identification numbers, date, and time of sample collection, source of sample, preservative used, and the collector's initials. Analyses required should be identified. If a label is not available, the same information should be attached to the sample container, not lid, with an indelible, waterproof marking pen.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the Chain of Custody Record. All packages sent to the laboratory shall be accompanied by the Chain of Custody Record and other pertinent forms. Copies of these forms shall be retained by the originating office.

Samples to be shipped to the laboratory shall be packed to prevent breakage and the package so sealed or locked that any evidence of tampering may be readily detected.

-oOo-

CONFIDENTIAL

CONSTRUCTION AND TESTING
OF
VADOSE ZONE MONITORING SYSTEMS
PENROSE AND NEWBERRY LANDFILLS,
AND
STRATHERN PIT

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

For

LOS ANGELES BY-PRODUCTS

Prepared by

LAW ENVIRONMENTAL, INC.

PROJECT NO. 58-7420

JANUARY 1989

004339

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LAW ENVIRONMENTAL, INC.

3420 N. SAN FERNANDO BLVD.
SUITE 200
BURBANK, CALIFORNIA 91504
818-848-0214
PANAFAX 818-848-1674

January 3, 1989

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058

Project No. 58-7420

Attention: Mr. Michael McAlister

Gentlemen:

This report, "Construction and Testing, Vadose Monitoring Systems, Penrose and Newberry Landfills, and Strathern Pit, Sun Valley District, Los Angeles, California," documents the construction of the vadose zone monitoring wells at the Penrose and Newberry Landfills, and Strathern Pit. Lysimeters were installed for the vadose zone monitoring program as required by the SWAT. The wells were successfully installed, however, no samples have been recovered to date.

Yours very truly,

LAW ENVIRONMENTAL, INC.

by Vincent M. Richards
Vince Richards
Staff Geologist

by Glenn A Brown
Glenn A. Brown, C.E.G. 3
Senior Vice President

VR/gla/7420.rp2

(3 copies submitted)

004340

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Appendices

A CONSTRUCTION DETAILS - PENROSE LYSIMETER

B CONSTRUCTION DETAILS - NEWBERRY LYSIMETER

C CONSTRUCTION DETAILS - STRATHERN LYSIMETER

004341

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CONSTRUCTION AND TESTING

OF

VADOSE ZONE MONITORING SYSTEMS

PENROSE AND NEWBERRY LANDFILLS,
AND STRATHERN PIT

SUN VALLEY DISTRICT
LOS ANGELES, CALIFORNIA

FOR

LOS ANGELES BY-PRODUCTS

INTRODUCTION

This report presents the results of drilling the vadose zone monitoring wells for the Penrose Landfill in Sun Valley District, Los Angeles, California. Lysimeters were installed based on preliminary specifications described in our "Response to Comments, Solid Waste Assessment Test, (SWAT Proposal), Penrose Landfill."

The purpose of this drilling program was to install a vadoze zone monitoring well immediately outside the waste disposal site as directed by the Regional Water Quality Control Board (RWQCB) in accordance with SWAT requirements.

The lysimeters are installed on the Penrose, Newberry and Strathern properties in native alluvial material (see Figure 1)

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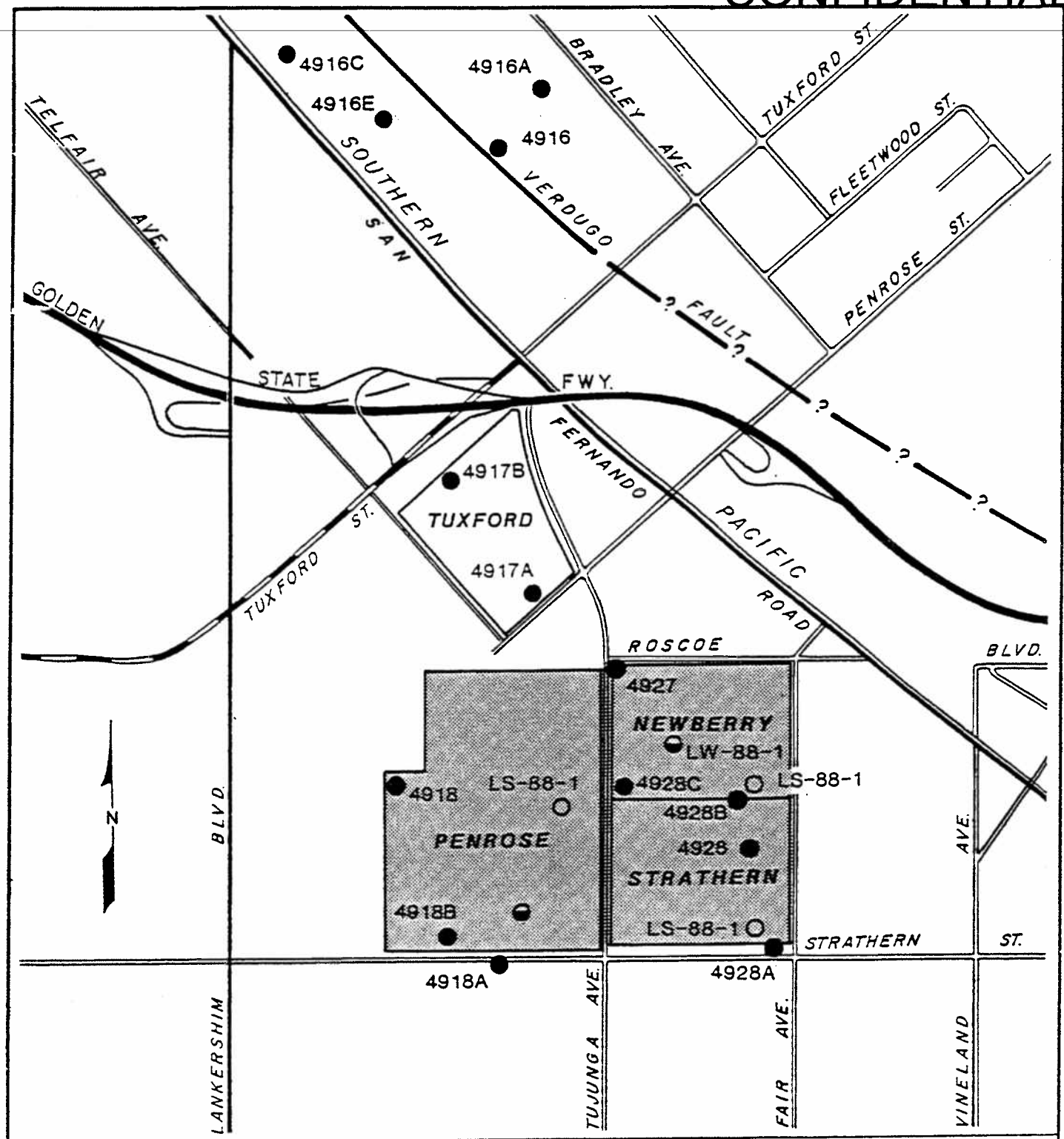


4927
LW ● WELL LOCATION AND NUMBER
◒ LEACHATE TEST HOLE
LS ○ LYSIMETER HOLE

BASE MAP FROM U.S. GEOLOGICAL SURVEY 7.5 MINUTE BURBANK AND VAN NUYS , 1972 QUADRANGLES .

MONITORING WELL LOCATIONS

0 2000 4000 FEET

FIGURE 1

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-7420 DATE 7/25/88 PROJ. MGR. _____ DFTR. M.G.

and will provide background water quality if a sample can be collected. Well drilling and lysimeter installation was provided by Mahaffey Drilling Company, Torrance, California and Datum Exploration, Long Beach, California. Logging of the alluvial materials penetrated, documentation of construction practices and testing were provided by Law Environmental, Inc., Burbank, California. All work related to well design and construction supervision was carried out in accordance with verbal authorization from Mr. Michael McAllister.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

LYSIMETER CONSTRUCTION

PENROSE LANDFILL

Drilling by Mahaffey Drilling Company commenced on March 15, 1988, using a Lima crane auger rig. A 12-inch diameter flight auger was drilled to a final depth of 52 feet in a native gravel deposit. Due to the coarse nature of the alluvial materials, the

drillers had some difficulty in stabilizing the borehole. The final average diameter of the borehole was 24 inches.

Upon completion of drilling, the lysimeter was placed through the auger and backfilled with sand and bentonite as the auger was retracted. Construction details and a lithologic log are shown in Appendix A. Silica flour mixed with distilled water was poured around the lysimeter, and frozen prior to installation to insure a minimum annular thickness of 1-1/2 inches. A lockable steel vault was secured around the lysimeter.

NEWBERRY LANDFILL

Drilling by Datum Exploration commenced on April 13, 1988 using a Failing F-10 auger rig and 10-inch diameter hollow stem augers. An initial attempt to complete the well was abandoned when 50 feet of waste material was encountered in the borehole. Historic maps showing the limits of disposal in this area are old and at best approximate. This borehole will be useful for future site characterization work.

On April 14, 1988, the second borehole was drilled 10 feet east of monitoring well 4928B. The borehole encountered slightly contaminated soil and inert waste material from 0-26 feet, and

was extended into native gravel deposits to a final depth of 55 feet.

Upon completion of drilling, the lysimeter was placed through the auger and backfilled with sand and bentonite as the auger was retracted. Construction details and a lithologic log are shown in Appendix B. Silica flour mixed with distilled water was poured around the lysimeter, and frozen prior to installation to insure a minimum annular thickness of 1-1/2 inches. A lockable steel vault was secured around the lysimeter.

STRATHERN PIT

Drilling by Datum Exploration commenced on April 27, 1988, using the Failing F-10 auger rig. Ten-inch diameter hollow stem augers were drilled in native gravel deposits to a final depth of 50 feet.

Upon completion of drilling, the lysimeter was placed through the auger and backfilled with sand and bentonite as the auger was retracted. Construction details and a lithologic log are shown in Appendix C. Silica flour mixed with distilled water was poured around the lysimeter, and frozen prior to installation

to insure a minimum annular thickness of 1-1/2 inches. A lockable steel vault was secured around the lysimeter.

LYSIMETER DETAILS

The vadose zone monitoring system installed at the sites consist of a vacuum-pressure tube type lysimeter employed in tandem with a transfer vessel. Both units are manufactured by TIMCO Manufacturing, Inc. of Wisconsin. Details of both units used at each site are shown in Appendix A, B and C.

The lysimeter body is approximately 2 inches in diameter and 18 inches in length. The body is composed of polytetrafluoro-ethylene (PTFE) with a porous PTFE filter which has an average pore size of 70 microns.

The transfer vessel is situated approximately 1 foot above the lysimeter and is 2 inches in diameter and 18 inches in length. The transfer vessel is utilized to transport the sample from the lysimeter to the surface. This is necessary since the pressure needed to force the sample to the surface from below 25 feet could disrupt the contact area between the silica flour and the PTFE filter on the lysimeter. Very little pressure is required to transfer a sample from the lysimeter to the transfer

vessel. The pressure can then be raised in the transfer vessel sufficiently to raise the sample to the surface.

The lysimeter and transfer vessel arrives from the manufacturer as one unit and is approximately four feet in length. At the time of installation, the pressure, vacuum, and sample tubes were attached at the top of the transfer vessel.

PENROSE LYSIMETER

Clear tygon tubing was utilized to distinguish each line and are numbered as follows:

#1 0.25" tube - Transfer vessel pressure or vacuum tube

#2 0.25" tube - Lysimeter pressure & vacuum tube

#3 0.25" tube - Sample evacuation tube

The tubing is run inside a 1.9-inch threaded casing that extends to the surface and through a 2-inch PVC cap with holes having corresponding numbers that match the tubes.

NEWBERRY LYSIMETER

Clear tygon tubing was utilized to distinguish each line and are numbered as follows:

#1 0.25" tube - Sample evacuation tube

#2 0.25" tube - Transfer vessel pressure or vacuum tube

#3 0.25" tube - Lysimeter pressure & vacuum tube

The tubing is run inside a 1.9-inch threaded casing that extends to the surface and through a 2-inch PVC cap with holes having corresponding numbers that match the tubes.

STRATHERN LYSIMETER

Colored polyethylene tubing was utilized to distinguish each line and is colored as follows:

0.25" Red tube - Lysimeter pressure and vacuum tube

0.25" Blue tube - Transfer vessel pressure or vacuum tube

0.25" Clear tube - Sample evacuation tube

The tubing is run inside a 1.9-inch threaded casing that extends to the surface.

HYDROLOGIC TESTING

Sampling was attempted on May 6, 1988, and although minimal water was present in each lysimeter, there was an insufficient amount for sampling purposes. There was always a possibility

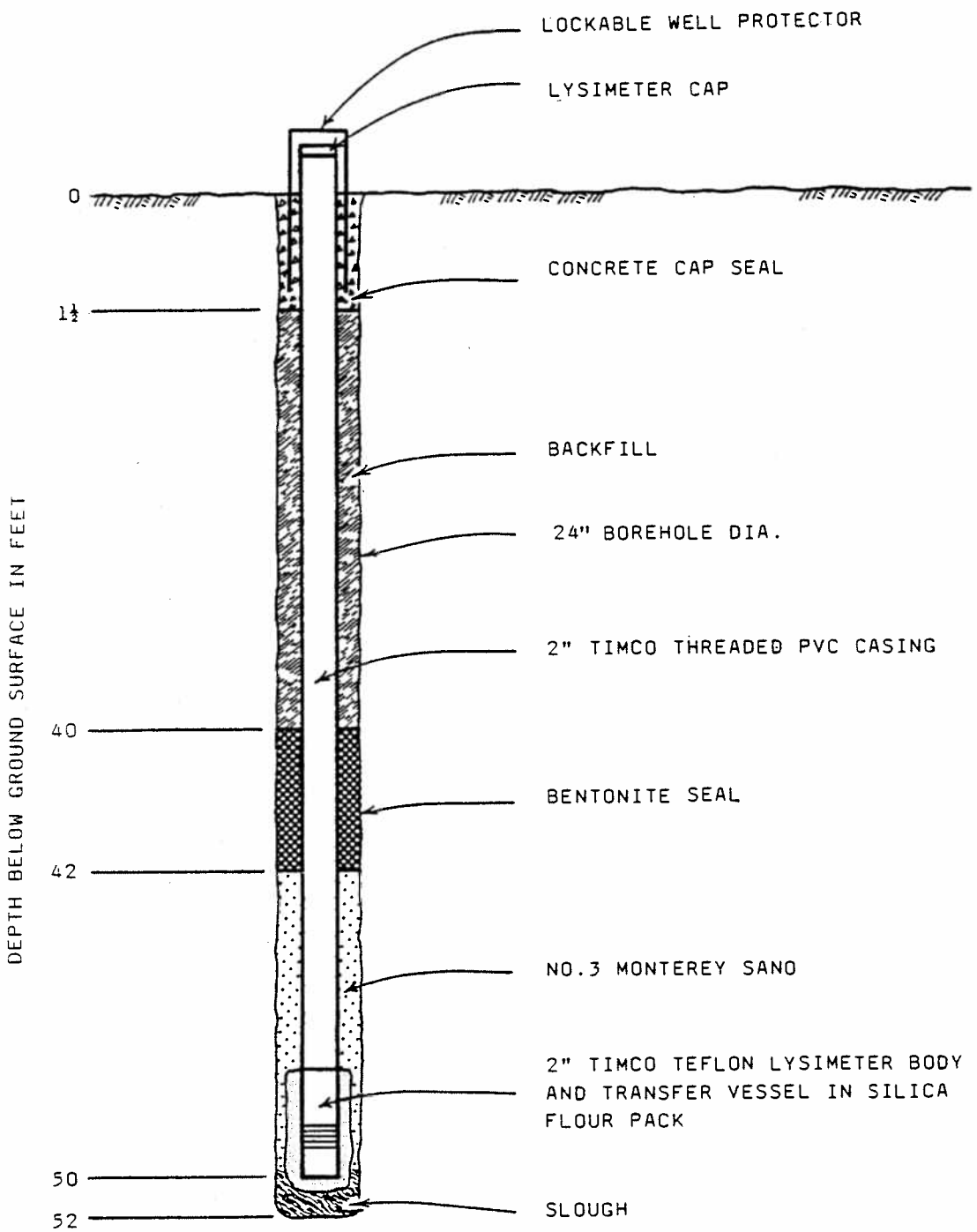
that a sample would never be recovered due to the high permeability and low moisture content of the alluvial material. If, in the future, only a small amount of water is intercepted by each lysimeter, chemical analyses will be made on a priority basis. Purgeable priority pollutant analyses by EPA 624 method will have the highest priority, followed by chloride, TDS, pH, one or two metals, and then general minerals.

-ooo-

APPENDIX A

CONSTRUCTION DETAILS - PENROSE LYSIMETER

CONFIDENTIAL



PENROSE LANDFILL

LYSIMETER CONSTRUCTION DETAILS

NOT TO SCALE

LAW ENVIRONMENTAL, INC.

PROJECT No. 58 20 DATE 2/1/8- PROJ. MGR. DFTR.

CONFIDENTIAL

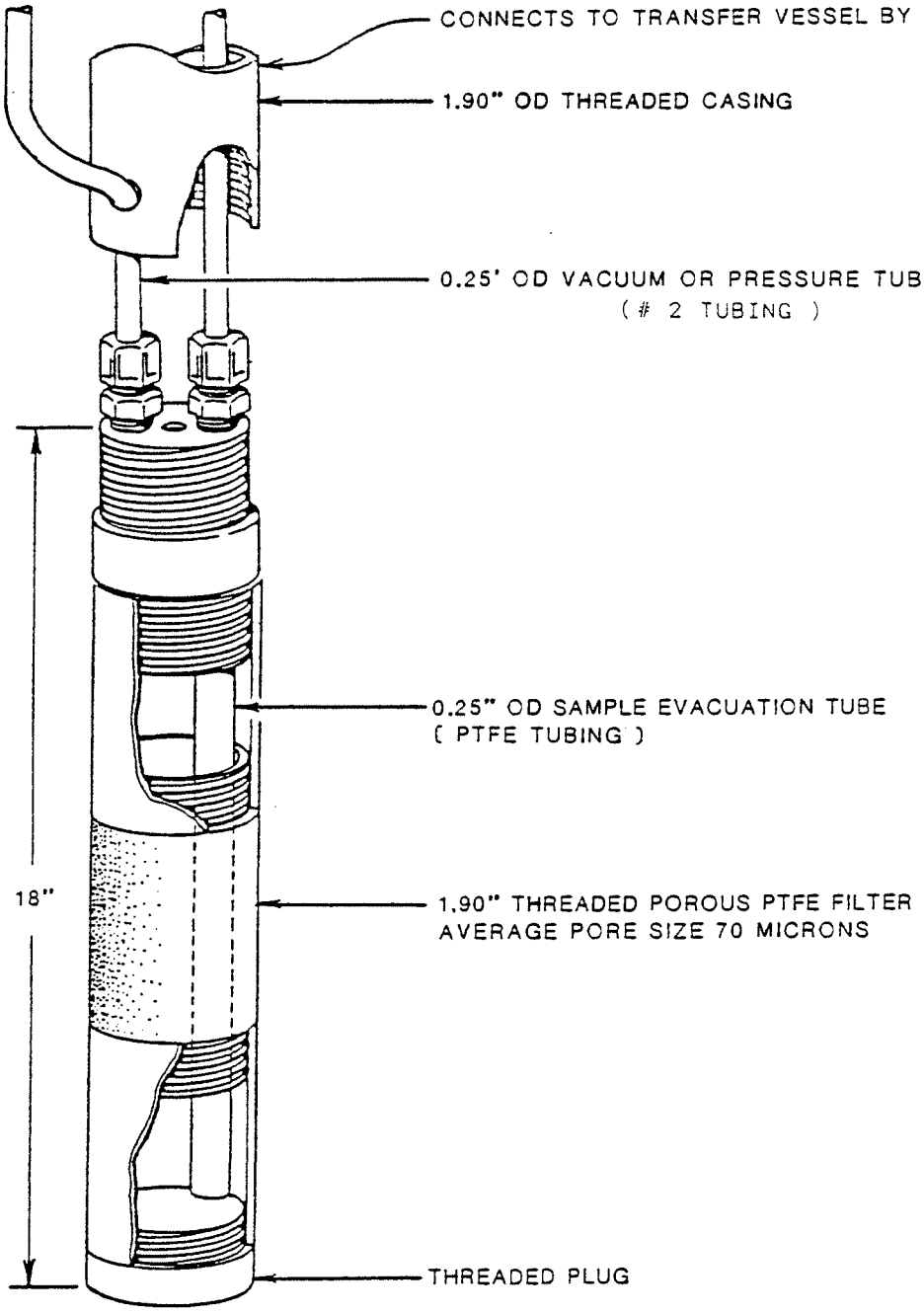
LITHOLOGIC LOG

Owner: Los Angeles By-Products Company
Location: 100' south of Penrose Landfill entrance on Tujunga
Drilled by: Datum International, Inc.
Logged by: Vince Richards
Drilling Method: Flight Auger
Borehole Depth: 52 feet
Borehole Diameter: 24 inches
Casing:
Perforations:
Ground Elevation: feet/asl
Top of Casing Elevation:

Project No.: 58-7420
Well No.: Penrose Lysimeter Well
Page 1 of 1
Date Completed: 3-15-88
Static Water Level:
Perched Water Level(s):
Drawdown: Yield:
Electrical Conductance: micromhos
Specific Capacity: gpm/ft

Depth (feet)	Sample	Graphic Log	Description of Materials
		Sandy Gravel	Light grey to tan sandy gravel. Sand is fine to coarse grained. Gravel fine to coarse cobble size, subangular to rounded. Material well graded, Igneous source.
10 -			Abundant cobbles
20 -			
30 -			Caving problems
40 -			
50 -			Abundant cobbles
			Total Depth 52'

Remarks: Also known as PLS-88-1



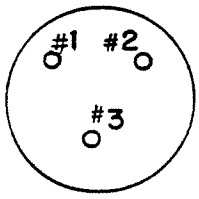
PENROSE LANDFILL

VACUUM PRESSURE LYSIMETER

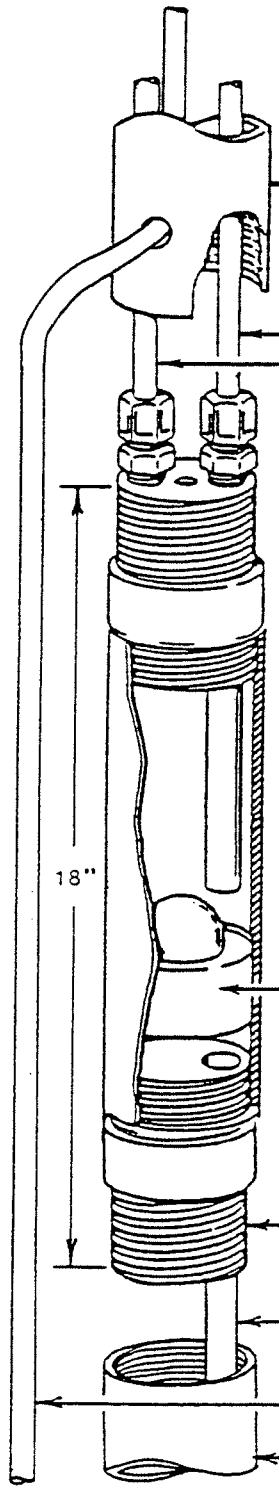
NOT TO SCALE

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-7420 DATE 07-25-89 PROJ. MGR. _____ DFTR. MH



2" PVC CAP
PLAN VIEW



1.9 OD THREADED PVC CASING
EXTENDED TO SURFACE

0.25" OD VACUUM OR PRESSURE TUBE
(# 1 TUBING)

0.25" OD SAMPLE EVACUATION TUBE
(# 3 TUBING)

BALL CHECK

THREADED PLUG

SAMPLE EVACUATION TUBE FROM LYSIMETER
(PTFE TUBING)

0.25" OD LYSIMETER PRESSURE OR
VACUUM TUBE (# 2 TUBING)

CONNECTS TO LYSIMETER BY HEAT WELD

PENROSE LANDFILL

TRANSFER VESSEL

NOT TO SCALE

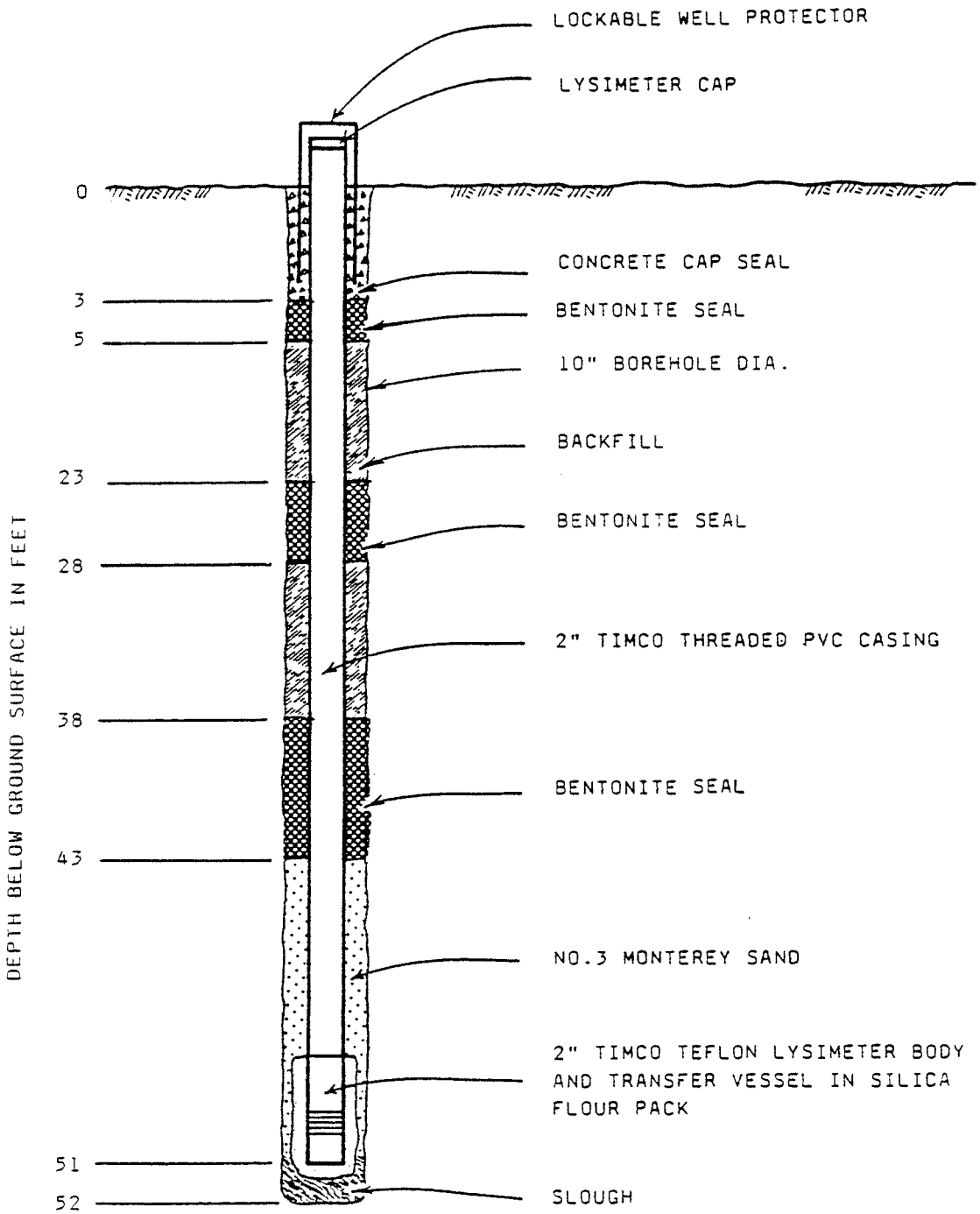
PROJECT No. 58-7420 DATE 7/25/88 PROJ. MGR. _____ DFTR. M.G.

LAW ENVIRONMENTAL, INC.

APPENDIX B

CONSTRUCTION DETAILS - NEWBERRY LYSIMETER

CONFIDENTIAL



NEWBERRY LANDFILL

LYSIMETER CONSTRUCTION DETAILS

NOT TO SCALE

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-7420 DATE 6/23/89 PROJ. MGR. AC DFTR. MG

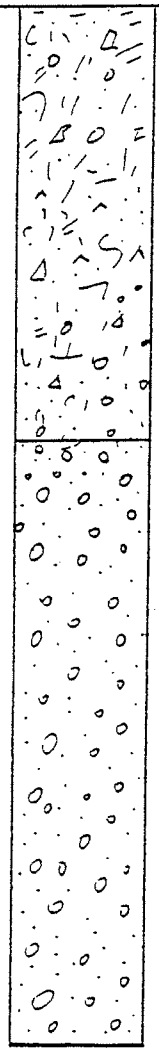
CONFIDENTIAL

LITHOLOGIC LOG

Owner: Los Angeles By-Products Company
Location: 10 feet east of Monitoring Well 49288
Drilled by: Datum International, Inc.
Logged by: Vince Richards
Drilling Method: Hollow Stem Auger
Borehole Depth: 55 feet
Borehole Diameter: 10 inches
Casing:
Perforations:
Ground Elevation: feet/asl
Top of Casing Elevation:

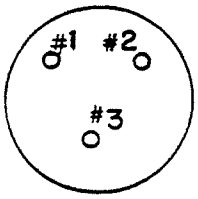
Project No.: 58-7420
Well No.: Newberry Lysimeter Well
Page 1 of 1
Date Completed: 4-14-88
Static Water Level:
Perched Water Level(s):
Drawdown: Yield:
Electrical Conductance: micromhos
Specific Capacity: gpm/ft

Depth (feet)	Sample	Graphic Log		Description of Materials
			Inert Waste and Soil	Dark grey odorous sand, gravel and wood. Soil appears stained, no paper or plastic
10 -				Abundant wood, cement and dark grey stained sandy gravel, odorous
20 -			Sandy Gravel	Dark grey stained sandy gravel. Sand ranges from fine to coarse. Gravel size ranges from fine to coarse cobble. Slight landfill gas odor. Material is derived from igneous source, well graded, subangular to rounded
30 -				
40 -				Same
50 -				
			Total Depth: 55'	

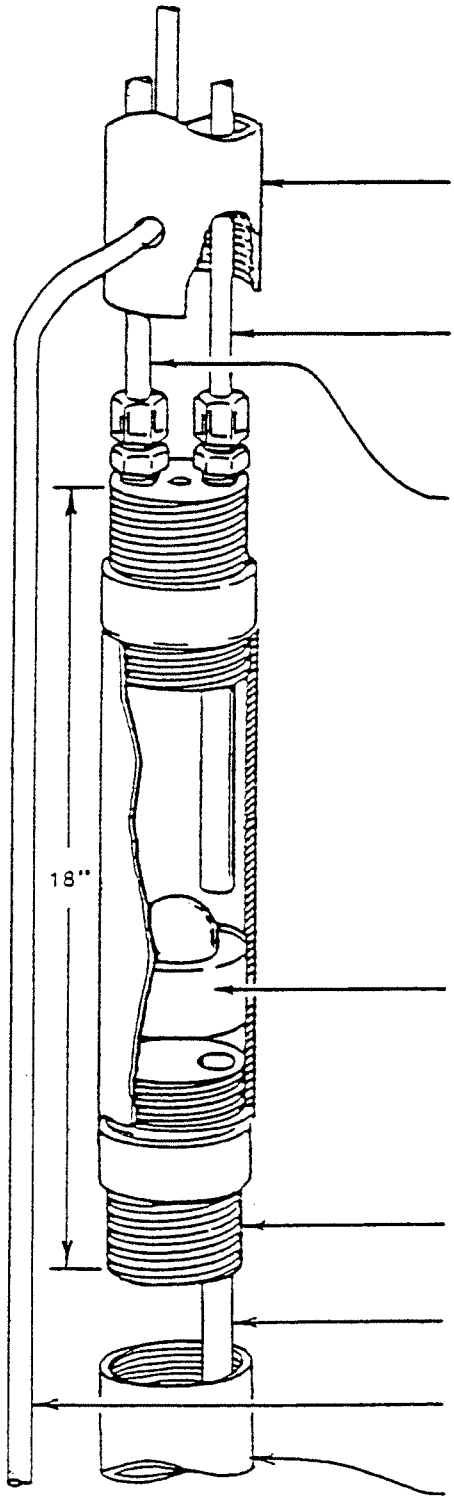


Remarks: Also known as NLS-88-1

CONFIDENTIAL



2" PVC CAP
PLAN VIEW



1.9 OD THREADED PVC CASING
EXTENDED TO SURFACE

0.25" OD VACUUM OR PRESSURE TUBE
(#2 TUBING)

0.25" OD SAMPLE EVACUATION TUBE
(#1 TUBING)

BALL CHECK

THREADED PLUG

SAMPLE EVACUATION TUBE FROM LYSIMETER
(PTFE TUBING)

0.25" OD LYSIMETER PRESSURE OR
VACUUM TUBE (#3 TUBING)

CONNECTS TO LYSIMETER BY HEAT WELD

NEWBERRY LANDFILL

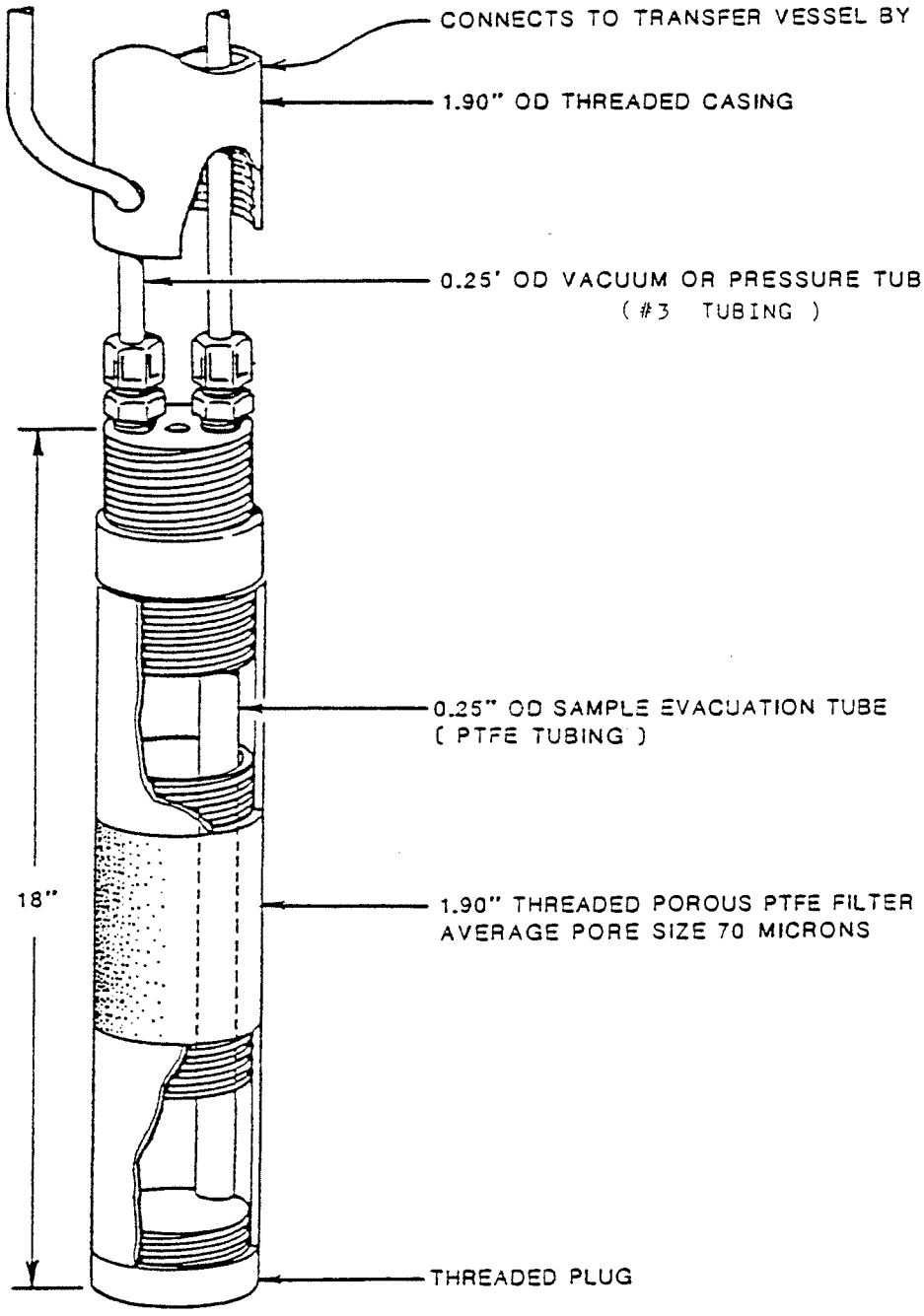
TRANSFER VESSEL

NOT TO SCALE

PROJECT No. 58-7420 DATE 7/25/88 PROJ. MGR. _____ DFTR. M.G.

LAW ENVIRONMENTAL, INC.

004359



NEWBERRY LANDFILL

VACUUM PRESSURE LYSIMETER

NOT TO SCALE

LAW ENVIRONMENTAL, INC.

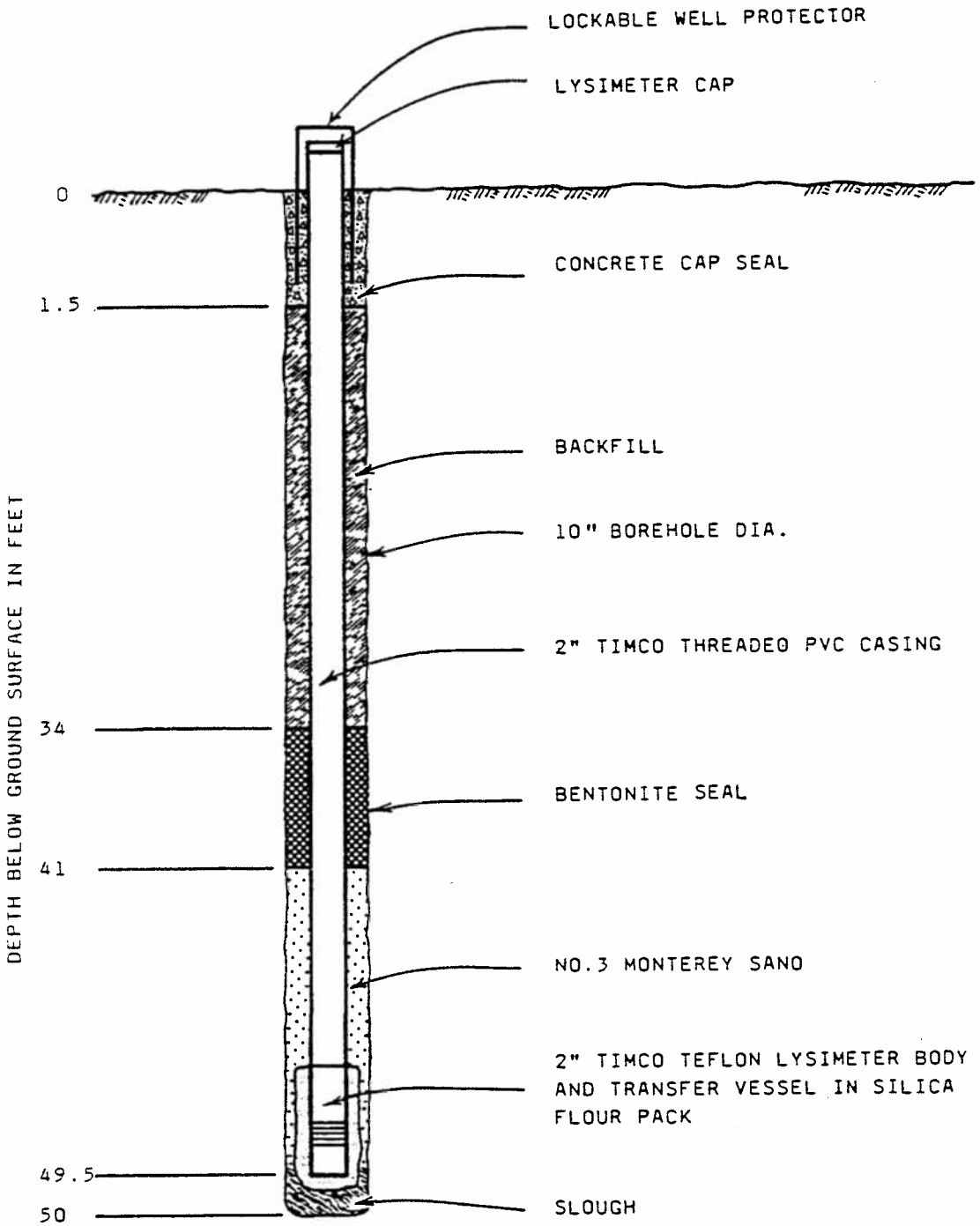
PROJECT No. 58-7420 DATE 07-25-89 PROJ. MGR. _____ DFTR. MB

CONFIDENTIAL

APPENDIX C

CONSTRUCTION DETAILS - STRATHERN LYSIMETER

CONFIDENTIAL



STRATHERN PIT

LYSIMETER CONSTRUCTION DETAILS

NOT TO SCALE

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-[illegible] DATE 9/2/86 PROJ. MGR. SHC DFTR. [illegible]

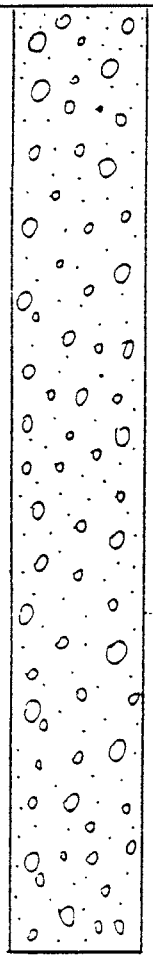
004362

CONFIDENTIAL

LITHOLOGIC LOG

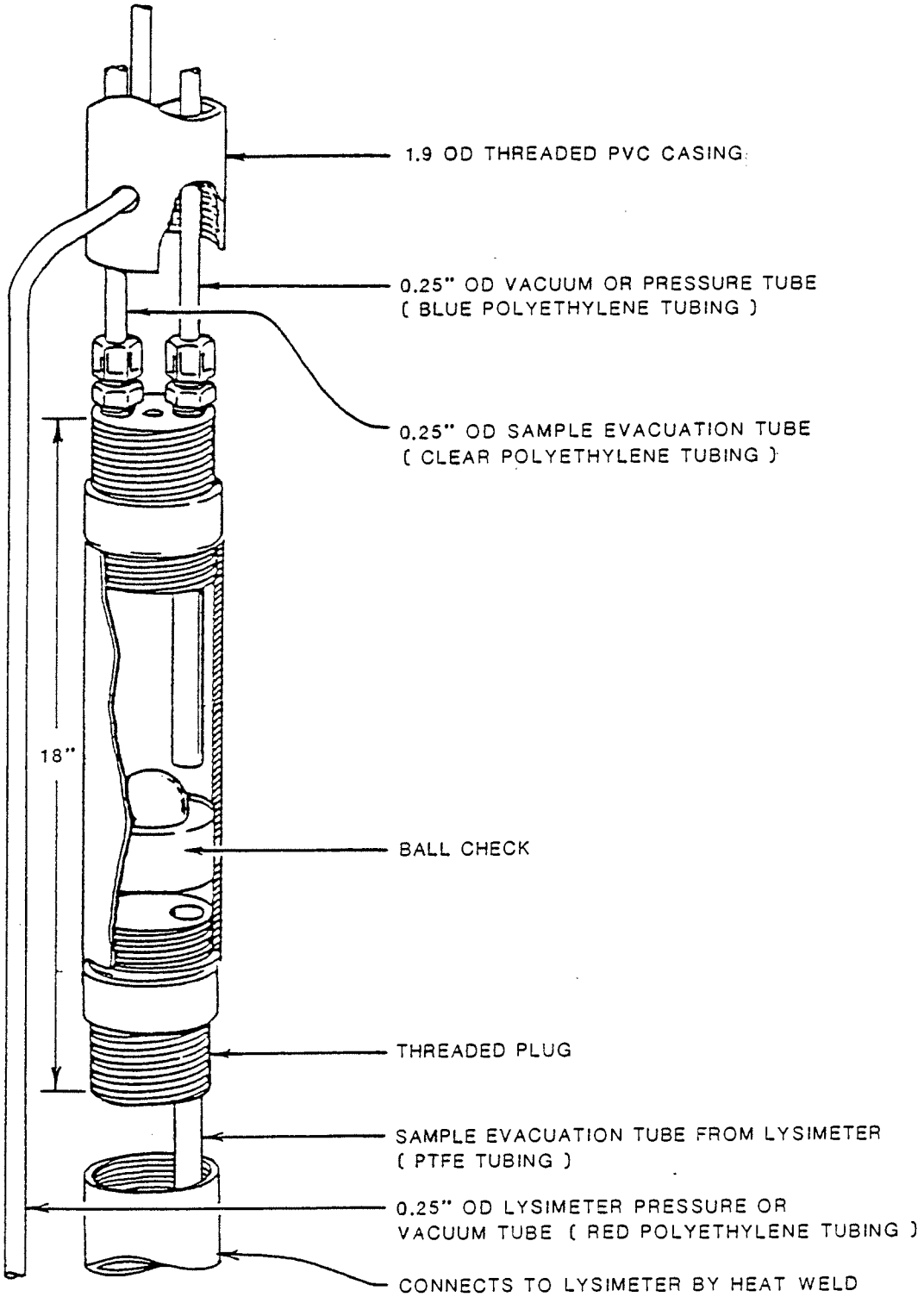
Owner: Los Angeles By-Products Company
Location:
Drilled by:
Logged by: Vince Richards
Drilling Method: Hollow Stem Auger
Borehole Depth: 50 feet
Borehole Diameter: 10 inches
Casing:
Perforations:
Ground Elevation: feet/asl
Top of Casing Elevation:

Project No. 58-7420
Well No. Strathern Lysimeter Well
Page 1 of 1
Date Completed: 4-27-88
Static Water Level:
Perched Water Level(s):
Drawdown: Yield:
Electrical Conductance: micromhos
Specific Capacity: gpm/ft

Depth (feet)	Sample	Graphic Log	Description of Materials
10 -			Sandy Gravel — Light grey dry sandy gravel, Sand size ranges from fine to coarse. Gravel size ranges from fine to coarse cobble. Unit is well graded and derived from Ingeous source.
20 -			
30 -			
40 -			Same
50 -			Total Depth: 50'

Remarks: Also known as SLS-88-1

PROJECT No. 58-7102 DATE 07-13-88 PROJ. MGR. _____ DFTR. _____



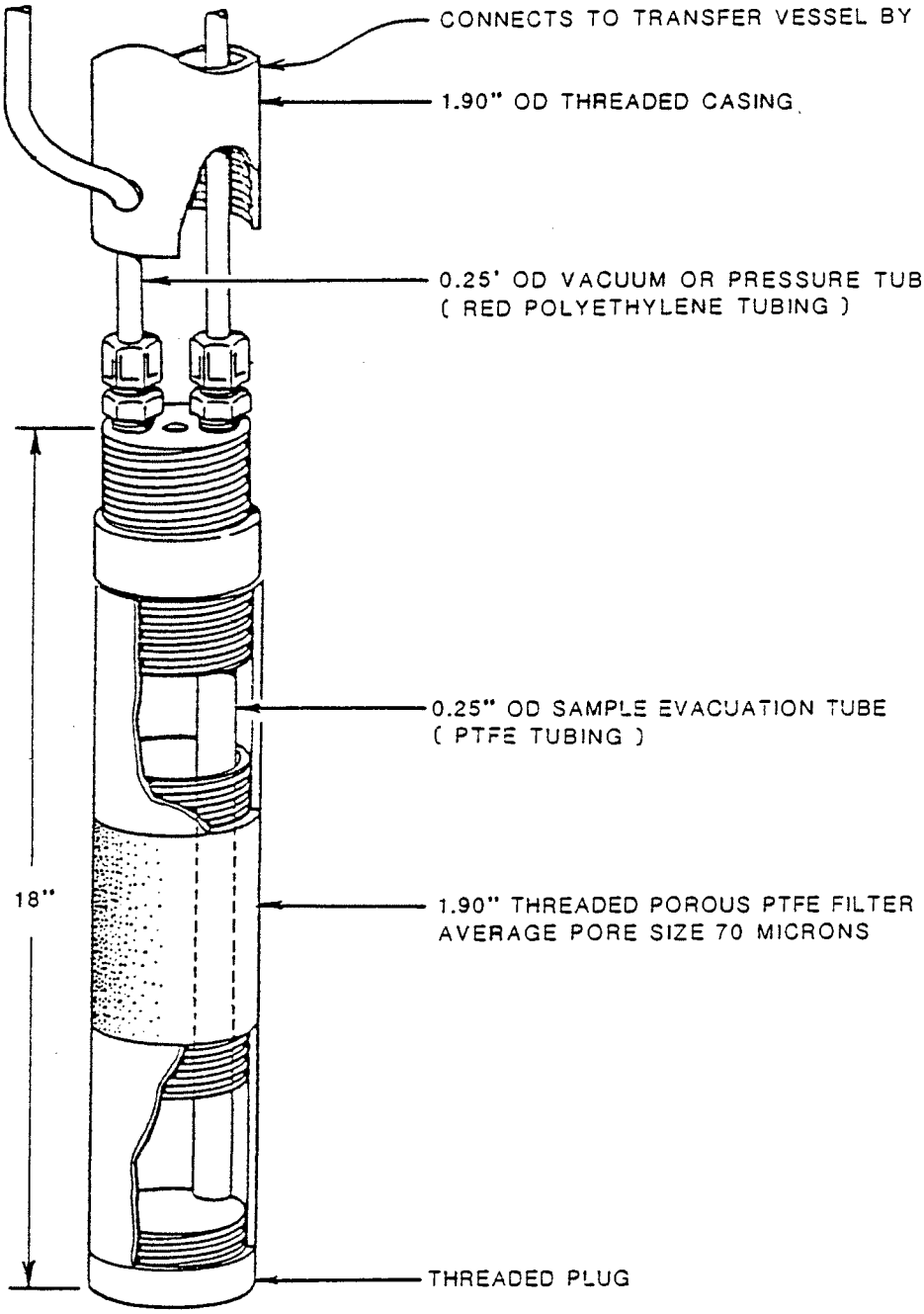
STRATHERN PIT

TRANSFER VESSEL

NOT TO SCALE

LAW ENVIRONMENTAL, INC.

004364



STRATHERN PIT

VACUUM PRESSURE LYSIMETER

NOT TO SCALE

PROJECT No. 58-7102 DATE 07-13-88 PROJ. MGR. _____ DFTR. AM

LAW ENVIRONMENTAL, INC.

CONFIDENTIAL

LAW ENVIRONMENTAL

SOLID WASTE ASSESSMENT TEST (SWAT) SUPPLEMENTARY MONITORING REPORT

PENROSE AND NEWBERRY LANDFILLS (CLOSED) AND STRATHERN PIT

SUN VALLEY DISTRICT

LOS ANGELES, CALIFORNIA

Prepared For

Los Angeles By-Products Company

July 1, 1989

Project No. 58-7420

004366

CONFIDENTIAL

LAW ENVIRONMENTAL, INC.
3420 NORTH SAN FERNANDO BOULEVARD
SUITE 200
BURBANK, CALIFORNIA 91504-2569

DATE	JOB NO.
07-06-89	58-7420 and 58-7340

PROJECT NAME: Los Angeles By-Products SWATS

ATTENTION: Mr. Claude VanGorden

RE:

TO: Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, CA 90058

LETTER OF TRANSMITTAL

GENTLEMEN: WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via U. S. Mail the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☒ SWAT Reports

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE.

COPIES	DATE	NO.	DESCRIPTION
			Solid Waste Assessment Test (SWAT) Report Supplementary:
2	07-01-89		Penrose and Newberry Landfills and Strathern Pit
2	07-01-89		Tuxford Landfill (closed)

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

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☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ **FOR BIDS DUE** _____ 19____ ☐ **PRINTS RETURNED AFTER LOAN TO US**

REMARKS _____

COPY TO (2) RWQCB on July 3, 1989

for Alice Campbell

Signed: Martine Alter

Martine Alter, staff geologist

ORIGINAL

004367

CONFIDENTIAL

LAW ENVIRONMENTAL, INC.

3420 N. SAN FERNANDO BLVD.
SUITE 200
BURBANK, CALIFORNIA 91504
818-848-0214
(FAX 818-848-1674)

June 30, 1989

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058

Project No. 58-7420

Attention: Mr. Claude VanGorden

Gentlemen:

SOLID WASTE ASSESSMENT TEST (SWAT) REPORT SUPPLEMENT
Penrose, Newberry Landfills
and Strathern Pit
Sun Valley District
for Los Angeles By-Products Company
Los Angeles, California

This report contains supplemental vadose, surface and ground water data and analysis to complete the 1988 data requirements for the Penrose and Newberry Landfills SWATs, as required by the Regional Water Quality Control Board (RWQCB), Los Angeles Region, under the Calderon Act.

This report completes the data requirements for the SWAT report as originally approved by the Board. It represents the results of the monitoring program, our interpretation of the data, and our conclusions on whether these sites are leaking hazardous compounds into the ground water.

SWAT SUMMARY

This report presents the final results of the Solid Waste Assessment Test (SWAT) ground water monitoring program for the Penrose and Newberry facilitiy. This program was approved by the Regional Water Quality Control Board (RWQCB) on October 27, 1987.

Monitoring of background water quality for the Strathern Pit has also been included within this report for the purpose of future reference.

Portions of this report are based on information furnished to us by Los Angeles By-Product Company under the Penrose Monitoring Program. No warranty as to the completeness or accuracy of this data is made.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report was prepared under the supervision of a certified Engineering Geologist with a minimum of 10 years of experience in ground water hydrogeology.

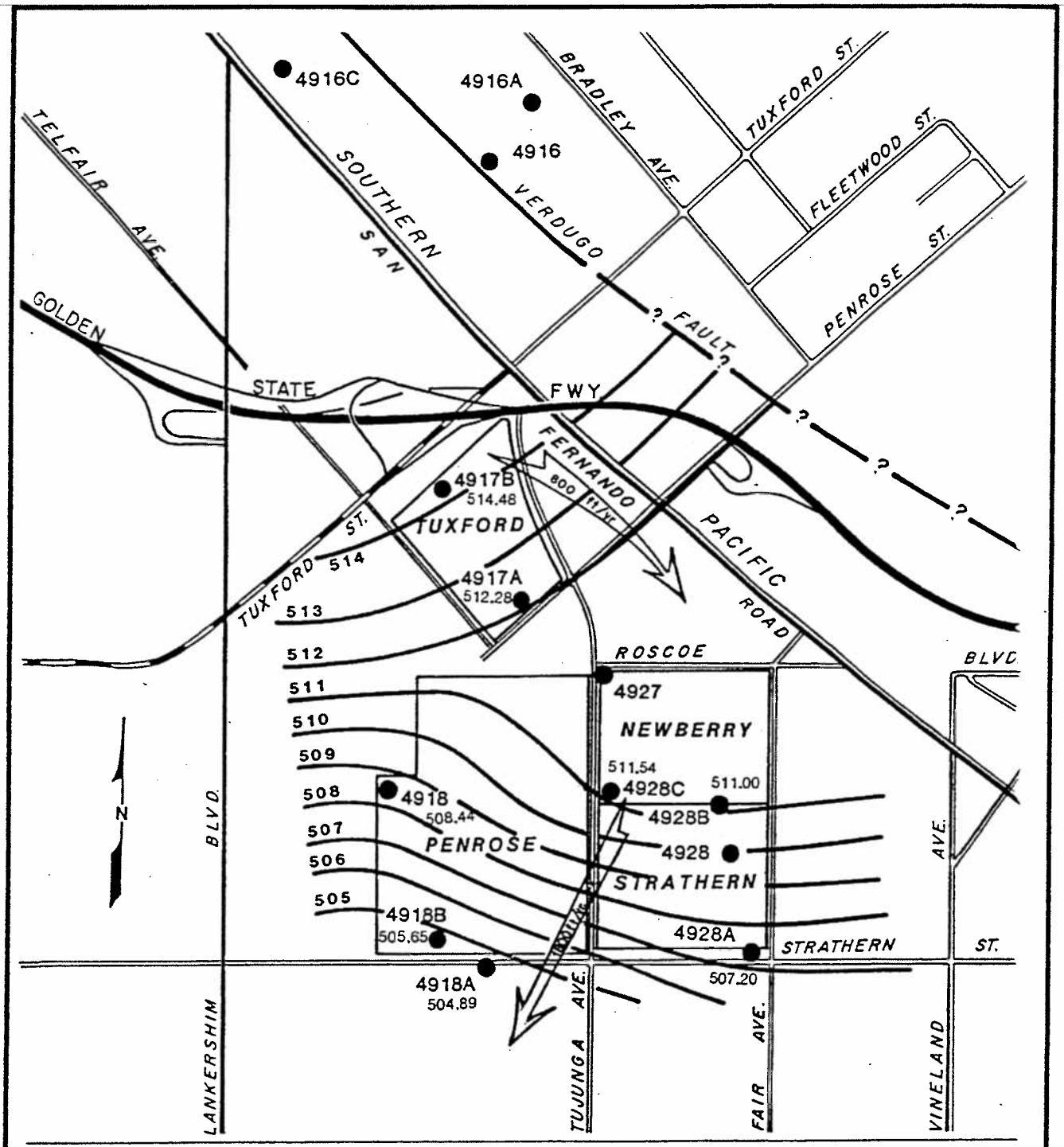
GROUND WATER MONITORING PLAN SUMMARY

The locations of monitoring wells with water levels in the vicinity of the site are shown on Figure 1. In selecting wells to monitor this site, we have taken into account the direction of ground water movement which is historically from north to south. Figure 1, Ground Water Elevations show ground water elevations, well locations and velocities for the winter of 1989. Eight wells south of the Verdugo Fault were used in the monitoring plan. Sampling of these wells provides the background water quality and the quality of water passing the site. The velocity calculations are shown in Appendix A.

GROUND WATER LEVELS

One of the most significant changes that has been observed during the SWAT program is the steady drop in regional ground water levels. The changes are a direct result of the drought condition that has existed in the Los Angeles basin over the past three years and which appears to be continuing. This water level data supports the agencies decision to allow longer screened intervals in the monitoring well network to allow for the continuation of sampling at the water level declines.

CONFIDENTIAL



4918 ● WELL LOCATION AND NUMBER

508.44 WATER ELEVATION (feet above sea level)

508 LINE OF EQUAL GROUND WATER ELEVATION (feet above sea level)

GROUND WATER FLOW DIRECTION AND VELOCITY (feet per year)

BASE MAP FROM U.S. GEOLOGICAL SURVEY 7.5 MINUTE BURBANK AND VAN NUYS QUADRANGLES, 1972.

0 1000 2000
FEET

PROJECT No. 38-1420 DATE 6/7/89 PROJ. MGR. A.C. DFTR. M.G.

GROUND WATER ELEVATIONS
FEBRUARY 1989

FIGURE 1

LAW ENVIRONMENTAL, INC.

DIETERICH POST REORDER NO. 128233

004371

Another significant change is in the flow direction beneath the site. Ground water direction has changed almost 45 degrees from south to southwest. This is probably due to the new LADWP Rinaldi-Toluca Lake Well field to the southwest which is changing ground water flow directions generally in the northwest part of the San Fernando Valley.

WATER QUALITY SUMMARY

Water quality has been monitored at the Penrose Landfill for approximately 4 years. The SWAT Monitoring Program at the Penrose Landfill began in April of 1988 and consisted of quarterly sampling for the following parameters:

PARAMETERS	UNITS
General Mineral Analysis. . . . . (pH, EC, TDS, Cl, Na, NO_3, SO_4, CO_2, HCO_3, Ca, Mg, K, B, F)	mg/l
Metals. . . . . (As, Ba, Be, Cd, Cr, Co, Pb, Hg, Mo, Ni, Se, Hg, Tb, V, Sb, Al, B, Cu, Fe, Zn)	ug/l
EPA 624, 625. . . . . (plus MEK and acetone)	ug/l
COD, TOX, Oil and Grease.	mg/l

In addition, field measurements of temperature, pH, EC, alkalinity and carbon dioxide were collected. Results of the SWAT

Monitoring Program are presented in Appendix B. This data gives a long-term water quality background history to compare with the current data.

The general trends noted in the earlier SWAT report have continued for the remainder of the year. Both seasonal and long-term water quality trends are apparent in the wells.

The most significant change in the ground water quality has been with the rise and fall of TCE concentrations which appear to be related to regional plumes moving through the area.

On the following pages a series of figures are presented to illustrate the ground water condition at the site. One technique utilized is presenting ground water quality on a statistical graph. The graph is explained in Figure 2.

The water quality interpretations presented in Figures 3 through 18 reveal that many factors are simultaneously operating around the landfills which may affect water quality. The long-term water level drop is also believed to be affecting the overall quality. However, the low concentration of all the monitored parameters and upgradient regional data indicate that the Penrose Landfill is not measurably affecting water quality. The laboratory analyses for the SWAT monitoring wells and Chain of Custody documents are present in Appendix C of this report.

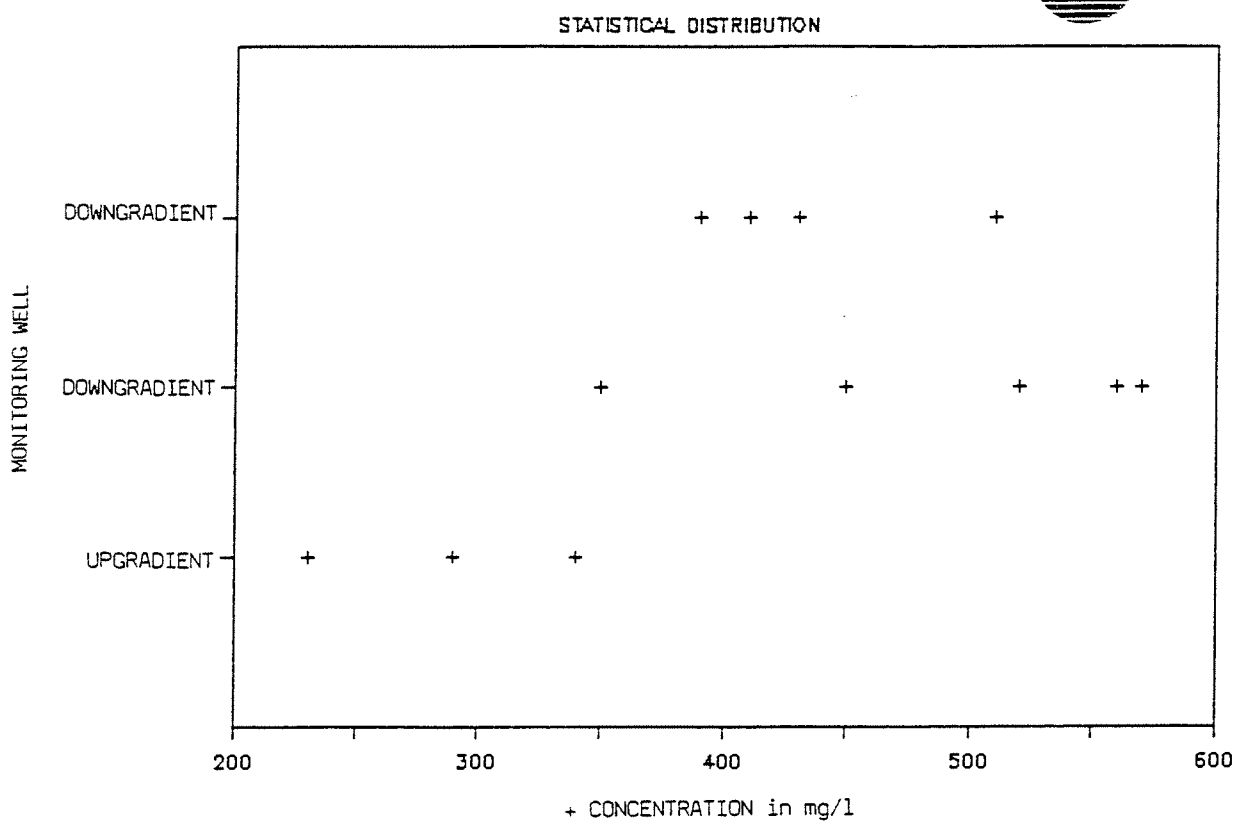


FIGURE 2

STATISTICAL DISTRIBUTION GRAPH EXAMPLE

This graph shows the frequency distribution for measurements of concentration of one parameter at each well in a monitoring network. It summarizes concentrations at all sampling times for each point. Using this graph, the data's mean, range and distribution may be visually estimated. In this case, downgradient levels are considerably higher than upgradient levels but are similar to each other, although one has a larger range than the other. This graph is the visual equivalent to calculating a T-distribution, which also compares means and standard deviations of upgradient and downgradient data sets.[1]

---

[1] Reference: The Elements of Graphing Data, 1985, Bell Laboratories by W. Cleveland.

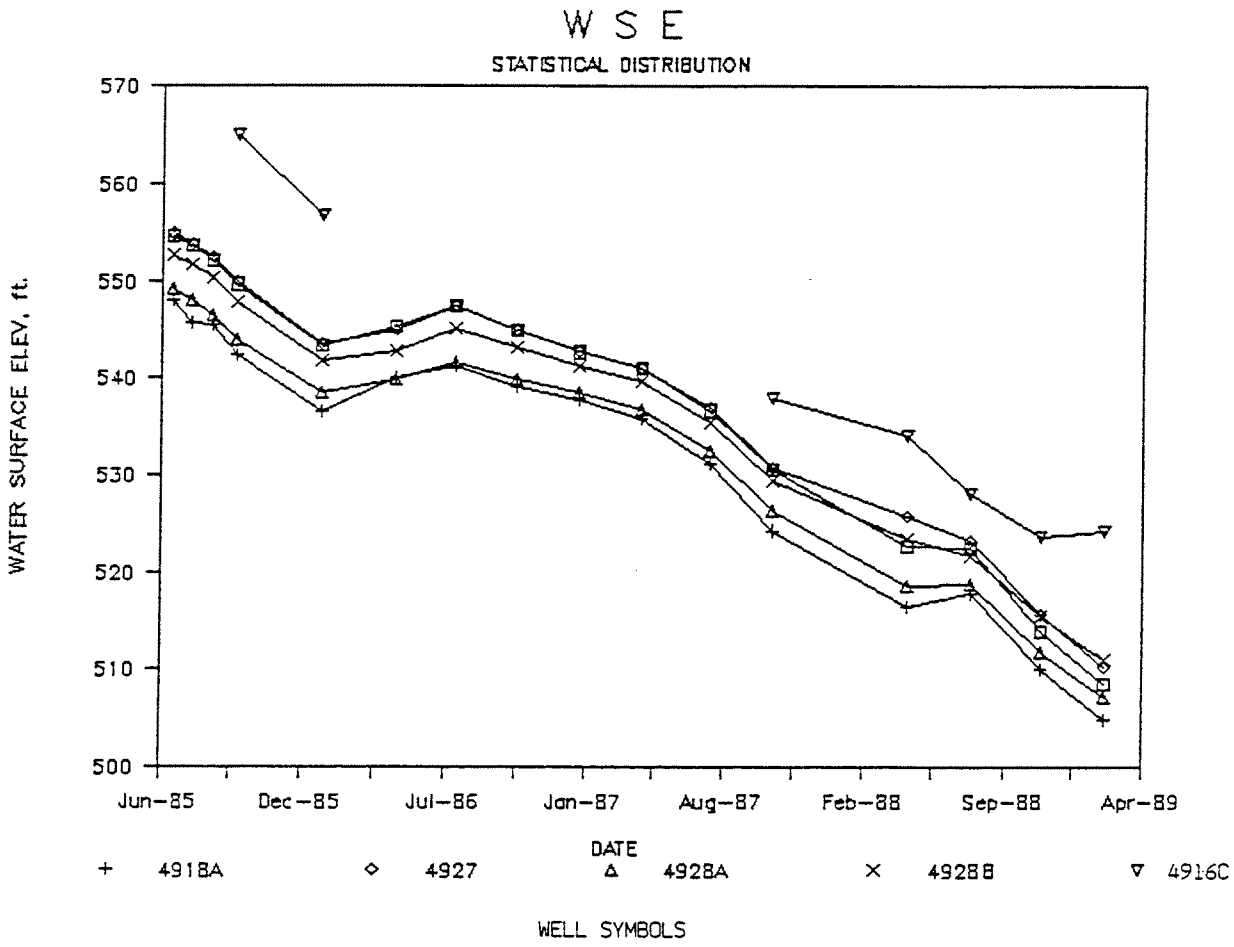


Figure 3

This chart shows the trend of water levels during monitoring from 1985 to the present. Since 1985 there has been a greater than 45 foot drop in the ground water elevations in this area. This data supports our decision to use longer screened intervals in the monitoring wells.

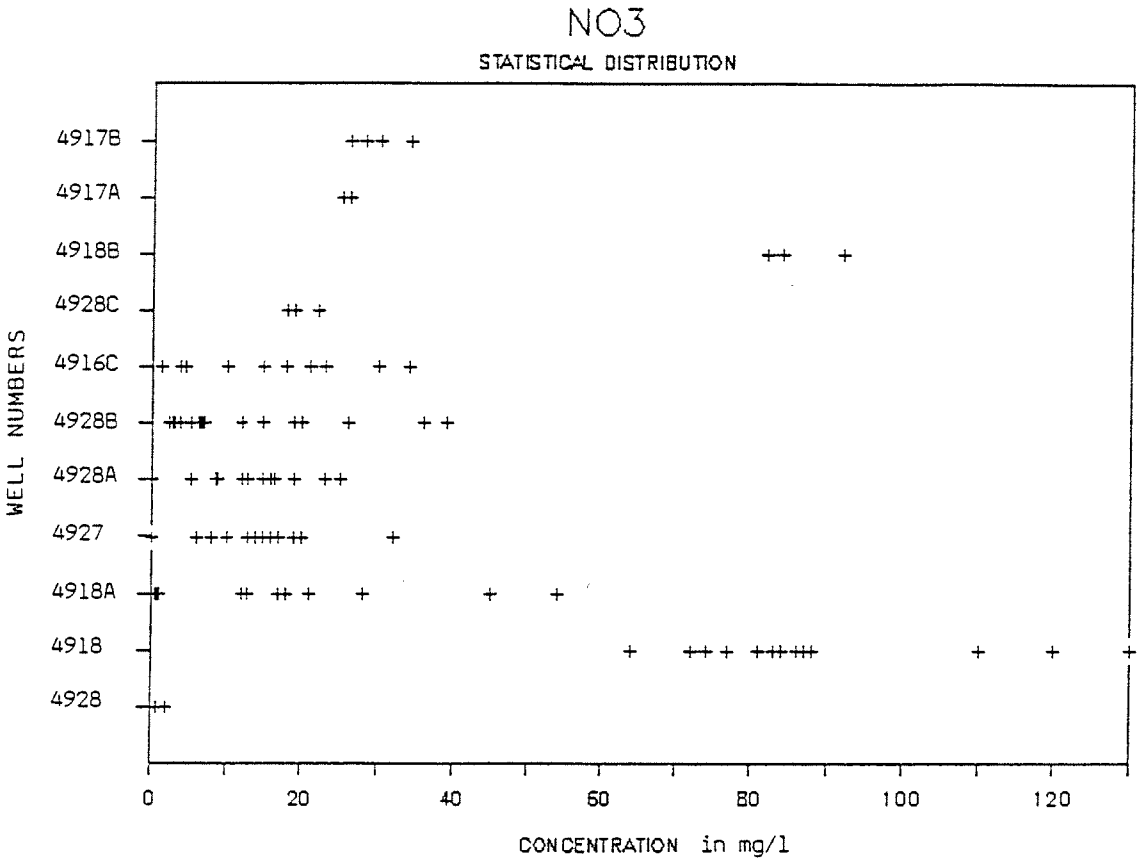


Figure 4

The nitrate levels in the Tuxford area reflect sources of nitrate that include agriculture (fertilizer and animal waste), household septic tank effluent, and decaying plant material.

This figure identifies that Well 4918B is downgradient of Well 4918 and the source of high nitrate levels is upgradient of the landfill.

240

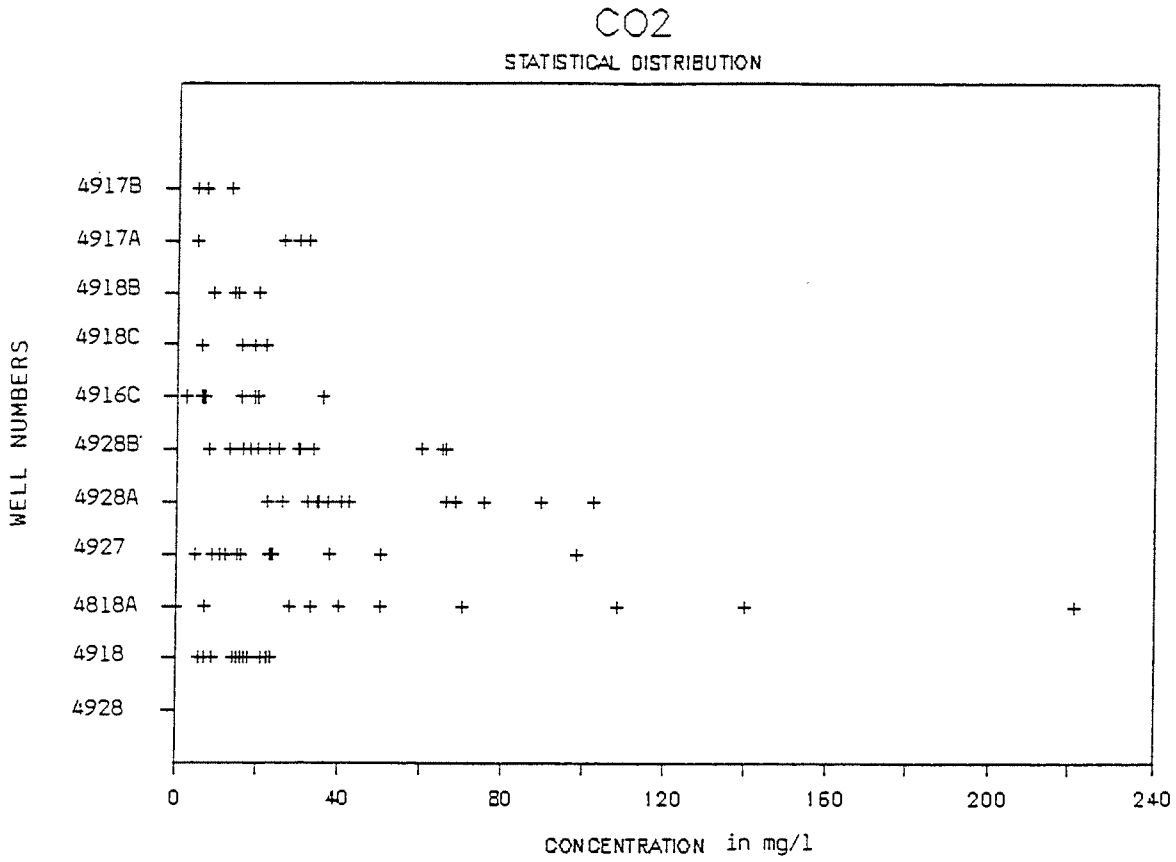


Figure 5

CO_2 is a field parameter used as an indicator of landfill gas migration. Well 4918A shows historic high levels which reflect a period when the gas collection system at the Penrose Landfill was undergoing improvements.

Higher levels in Well 4928A, which is proximate to an open pit, indicate that CO_2 from the atmosphere can also affect the concentration.

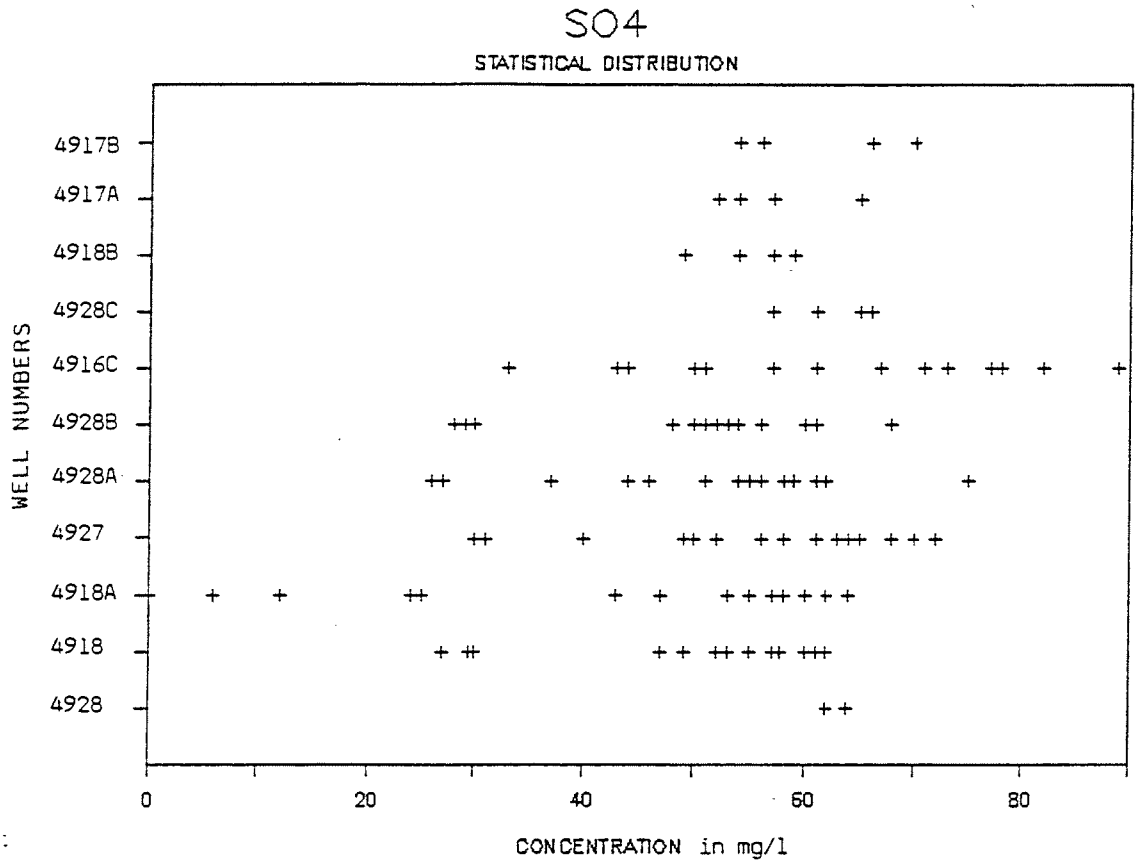


Figure 6

Although not fully understood, the historic data indicates that if significant gas migration from a landfill occurs, lowering of the SO_4 concentrations is noted. During late 1986 and early 1987, the gas migration system at Penrose lost efficiency. CO_2 levels rose in the 4918A well and SO_4 levels reduced dramatically. After the system was returned to normal operation the levels reversed.

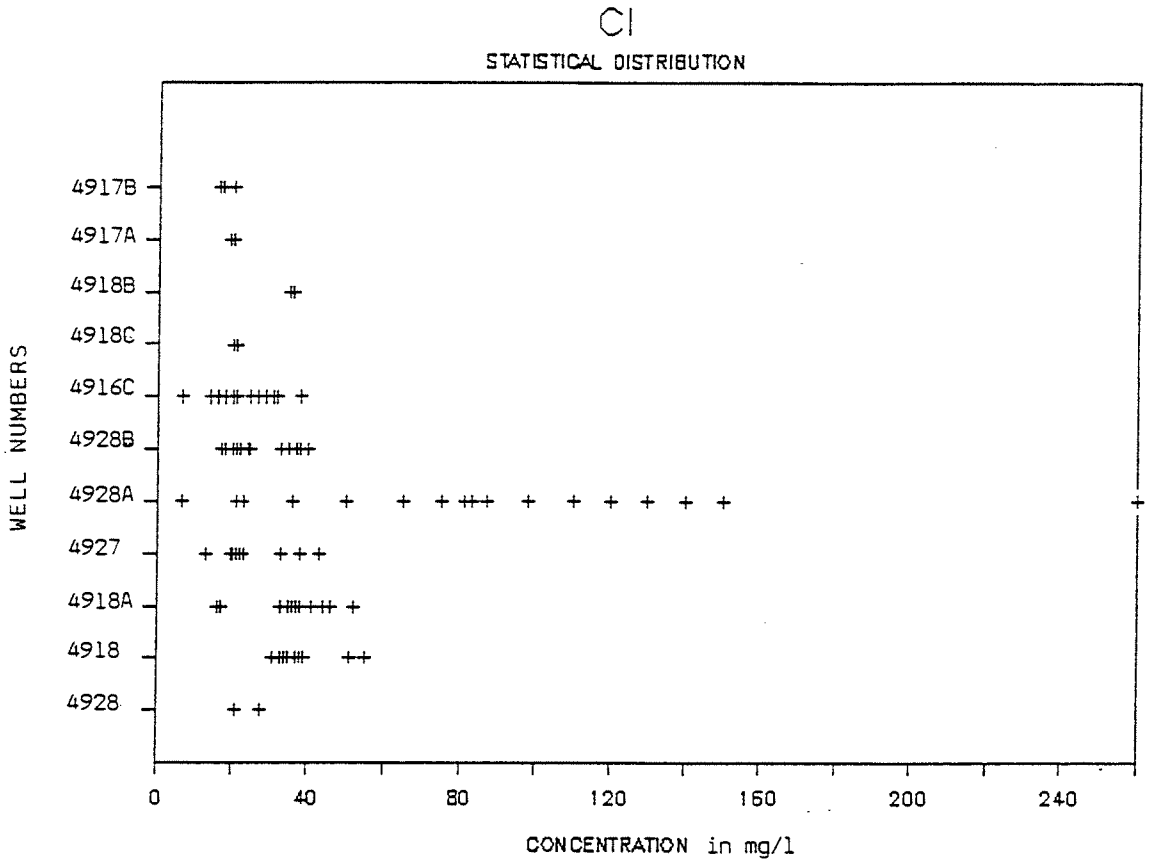


Figure 7

Chloride is a sensitive indicator parameter for detecting increases related to human activity, but levels must be interpreted carefully because so many different sources may be responsible. Natural causes can also cause changes in chloride. Chloride moves with ground water, but levels can vary greatly in short periods of time.

This figure suggests that the chloride levels are within the same range in each well and shows no trend of increased levels downgradient of the landfills. The higher levels seen in Well 4928A indicate a different source of water upgradient and east of the well.

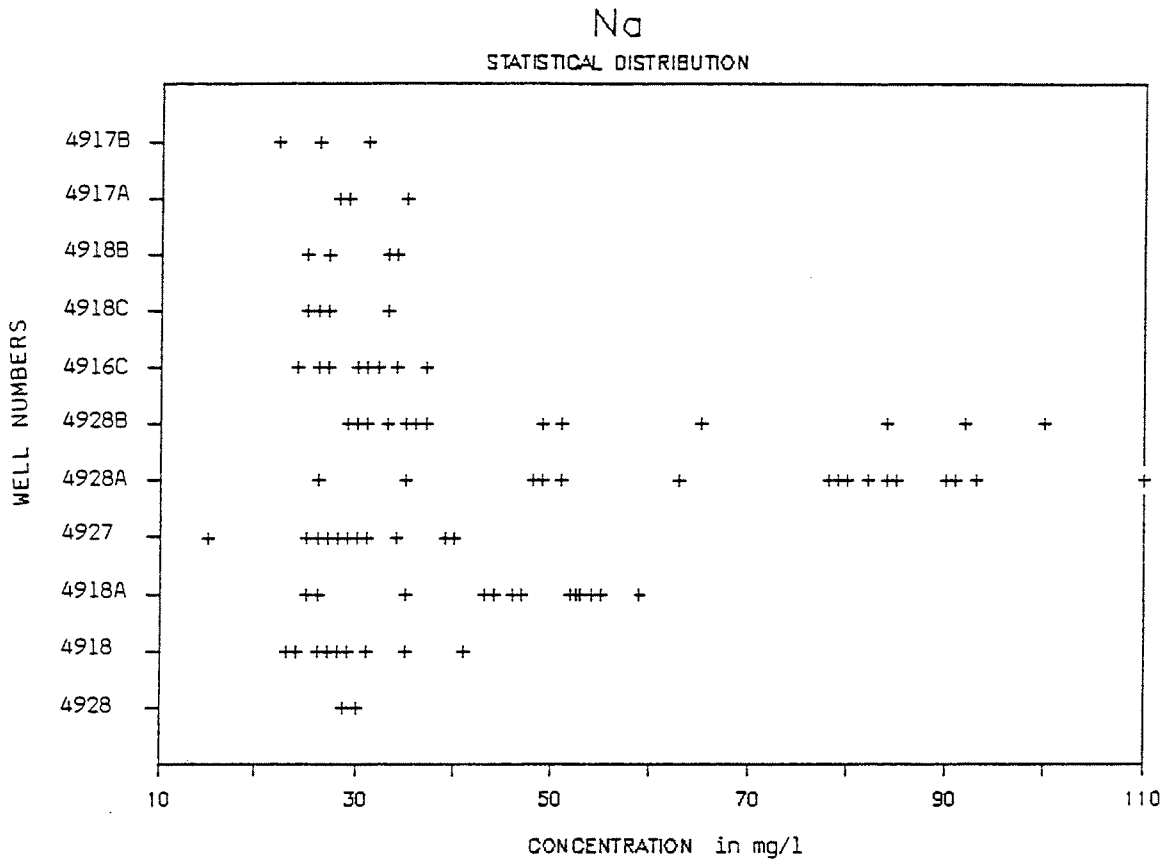
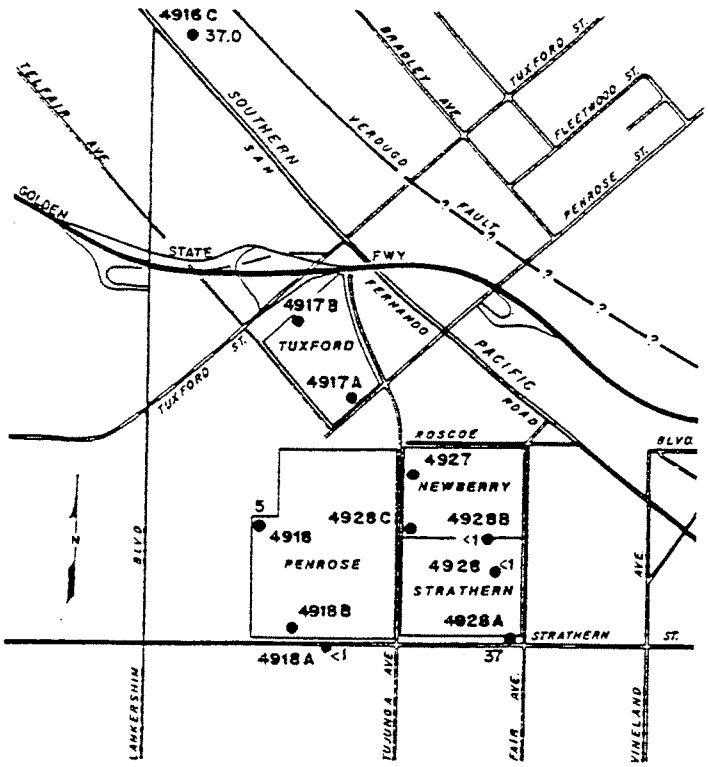


Figure 8

This figure shows evidence that two different sources for water are common at the site. Na concentration will change in a water source also due to lowering and raising of the water level surface and ion exchange mechanisms that are occurring at the site. The wider range in Na concentrations in Wells 4928 A and B suggest that those waters are different than the remaining wells and could be influenced from a different source of water migrating from the east. This data supports the chloride data discussed earlier.



EXPLANATION

4919 ● Monitoring well location and number

5 TCE concentration in micrograms per liter

Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

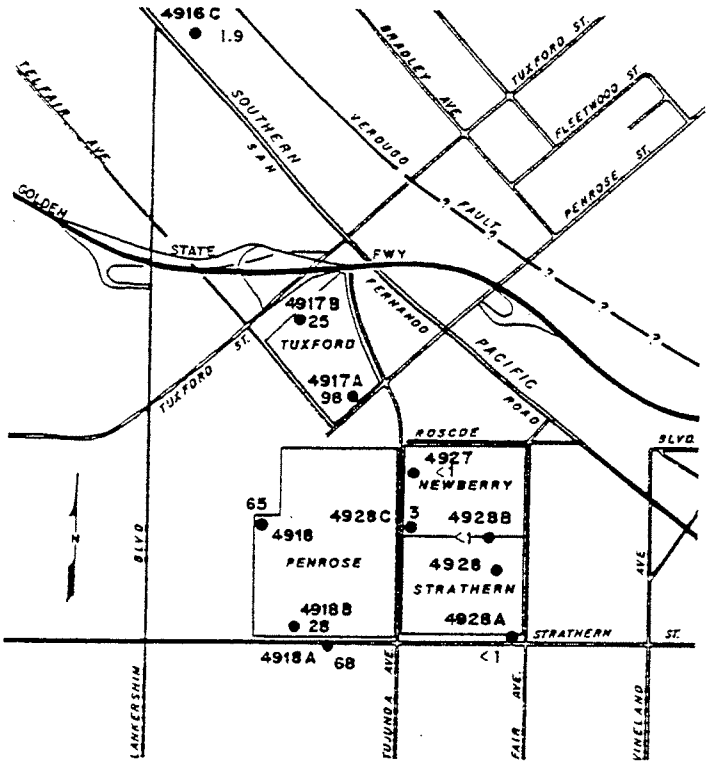
Figure 9

AREAL TCE DISTRIBUTION
SEPTEMBER 1985

The following series of five areal distribution maps supports the theory that regional plumes of TCE are migrating through the landfill area.

Prior to September 1985, levels of TCE were substantially higher in Well 4916C upgradient of all the landfills. A plume of solvents appears to be moving southward.

The high level at Well 4928A could be a remnant of an earlier plume or may represent a plume originating further to the east.



EXPLANATION

4919 ● Monitoring Well location and number

68 TCE concentration in micrograms per liter

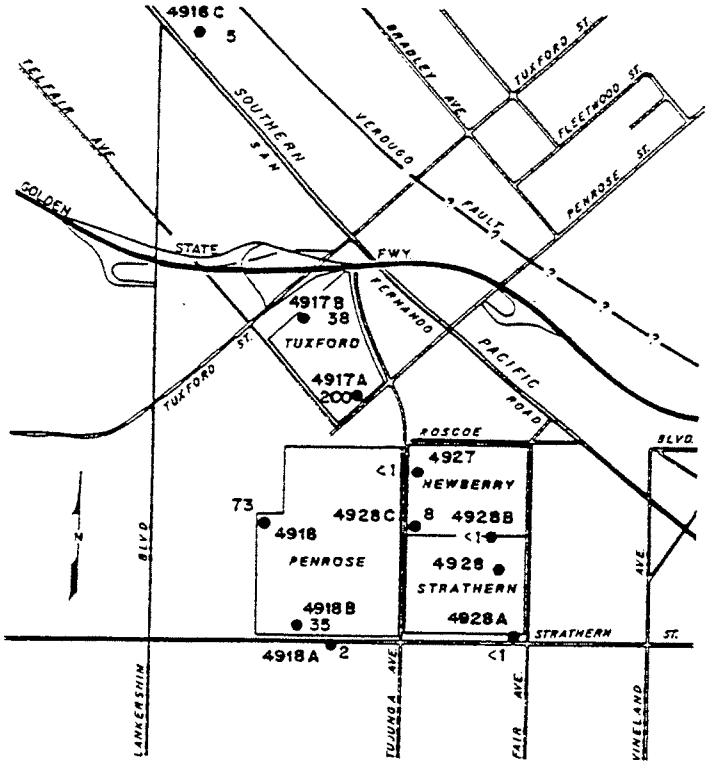
Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 10

AREAL TCE DISTRIBUTION
APRIL 1988

Between September of 1985 and April of 1988, the plume originating from the 4916C area has moved southward and is now present in Wells 4917A and B. The higher levels seen in 4918 are not believed to be related to a second plume originating northwest of Penrose.



EXPLANATION

4919 ● Monitoring well location and number

<1 TCE concentration in micrograms per liter

Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

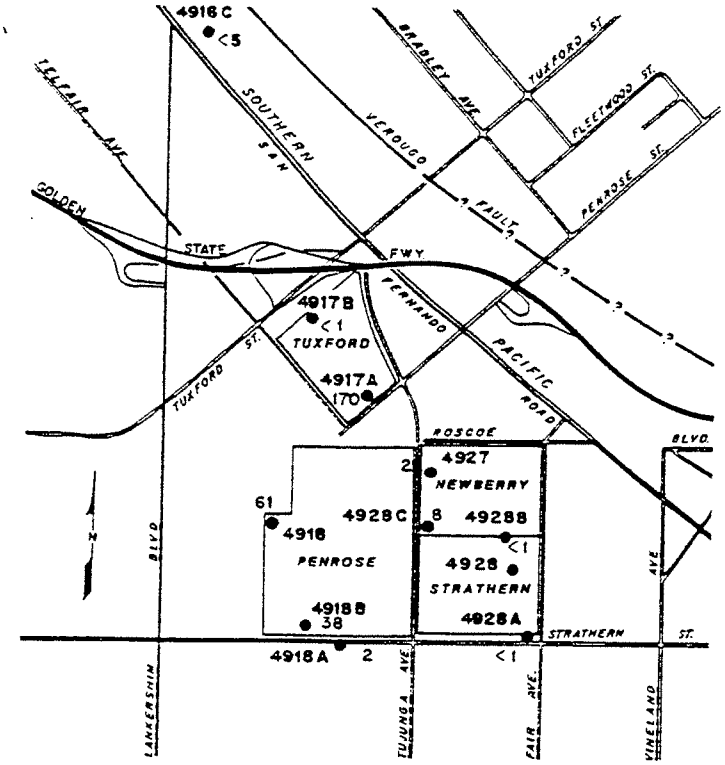
0 2000
feet

Figure 11

AREAL TCE DISTRIBUTION
JULY 1988

The two plumes continue to move south. Well 4918 continues to show increasing levels.

One interesting note is the fact that 4918A shows a significant drop in levels. During this period a packer had been placed in the well to isolate the upper aquifer area. This is a very poor producing zone and the packer actually cut off the more permeable zones which appears to carry the contamination.



EXPLANATION

4919 ● Monitoring Well location and number

38 TCE concentration in micrograms per liter

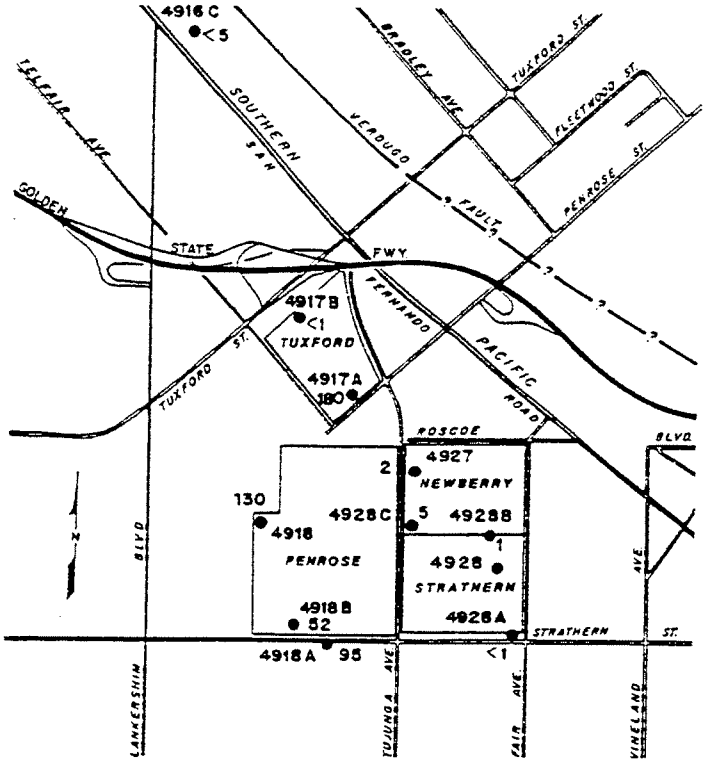
Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 12

AREAL TCE DISTRIBUTION
NOVEMBER 1988

The plumes continue to move south.



EXPLANATION

4919 ● Monitoring well location and number

52 TCE concentration in micrograms per liter

Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

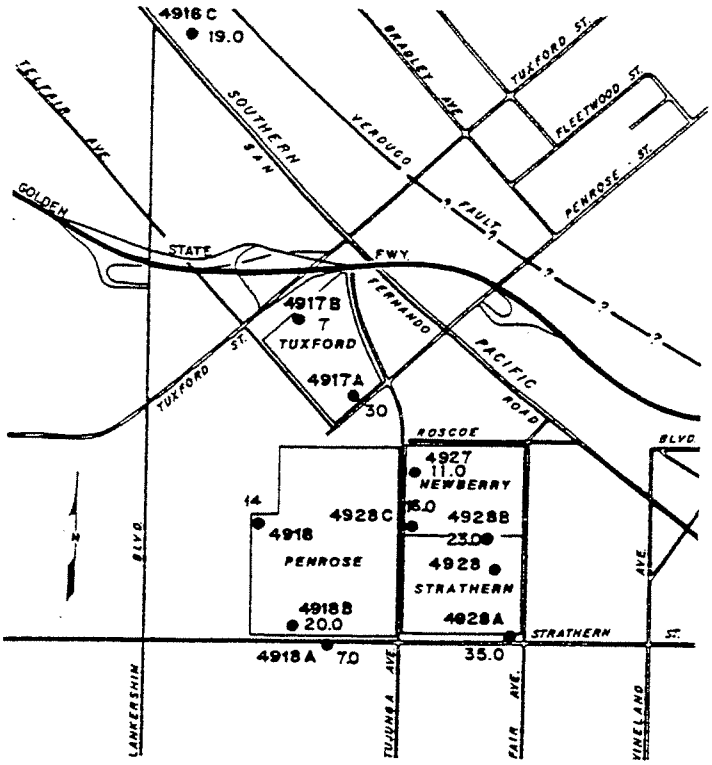
0 2000
feet

Figure 13

AREAL TCE DISTRIBUTION
FEBRUARY 1989

A second plume appears to be moving south from a source upgradient of Well 4918.

The packer in Well 4918A is no longer used and elevated levels of TCE appear again.



EXPLANATION

4919 ● Monitoring well location and number

14 CO_2 concentration in milligrams per liter

Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

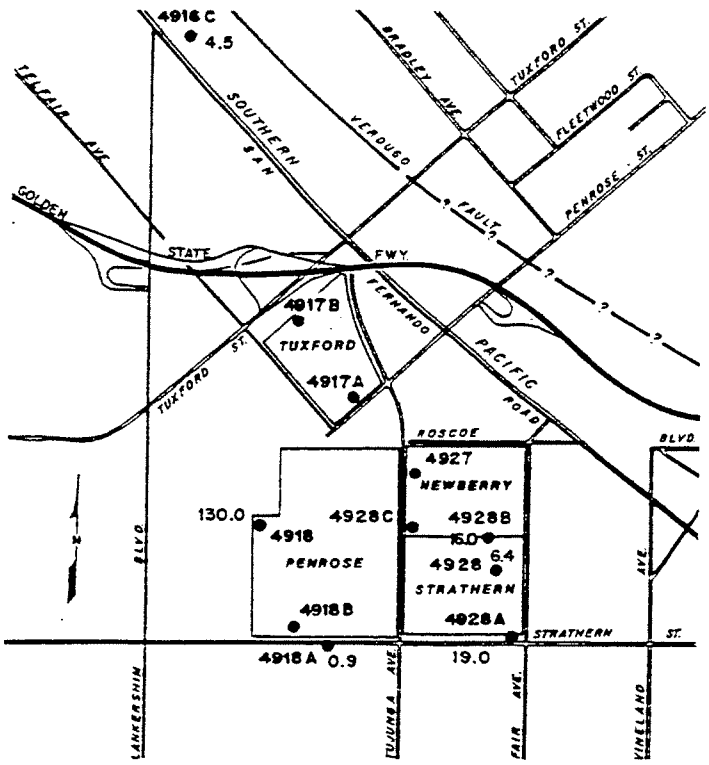
0 2000 feet

Figure 14

AREAL CO_2 DISTRIBUTION
FEBRUARY 1989

This areal distribution map shows CO_2 levels near the site. Wells 4928A and 4928B are adjacent to the open pit at Strathern and show elevated levels, suggesting atmospheric influence.

The elevated levels at 4917A and 4918A suggest that landfill gas has reached the well, but the levels are considered low. Proper control of the gas collection systems should maintain the low levels.



EXPLANATION

4919 ● Monitoring Well location and number

0.9 Nitrate concentration in milligrams per liter

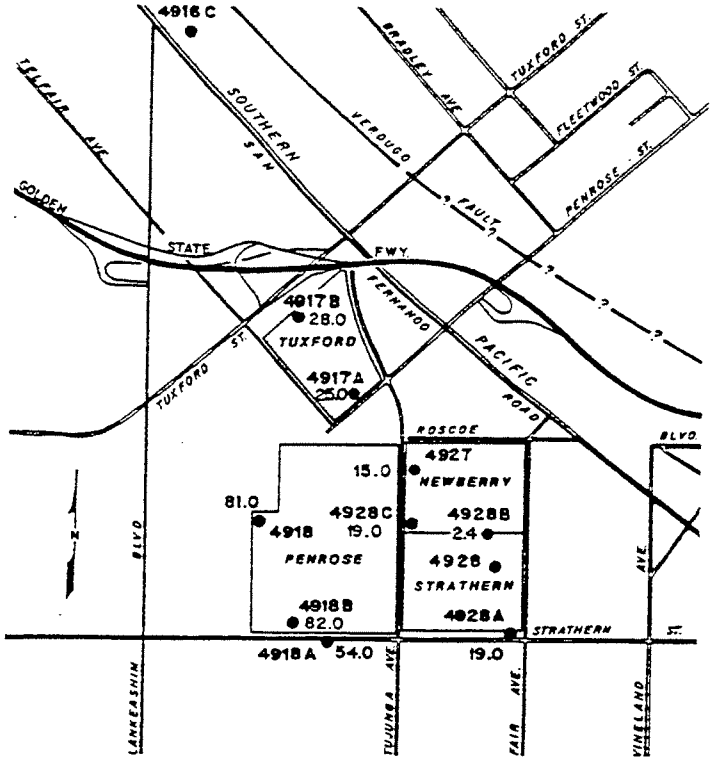
Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 15

AREAL NO_3 DISTRIBUTION
OCTOBER 1987

The following three distribution maps for NO_3 shows a very narrow plume of nitrate rich water migrating from Well 4918 to Well 4918B. This exemplifies the theory that distinct narrow pathways for contamination exist in the aquifer. These narrow pathways are probably related to gravel channels of Tujunga Wash. The nitrate levels are believed to represent historic land use in the area.



EXPLANATION

4919 ● Monitoring Well location and number

54.0 Nitrate concentration in milligrams per liter

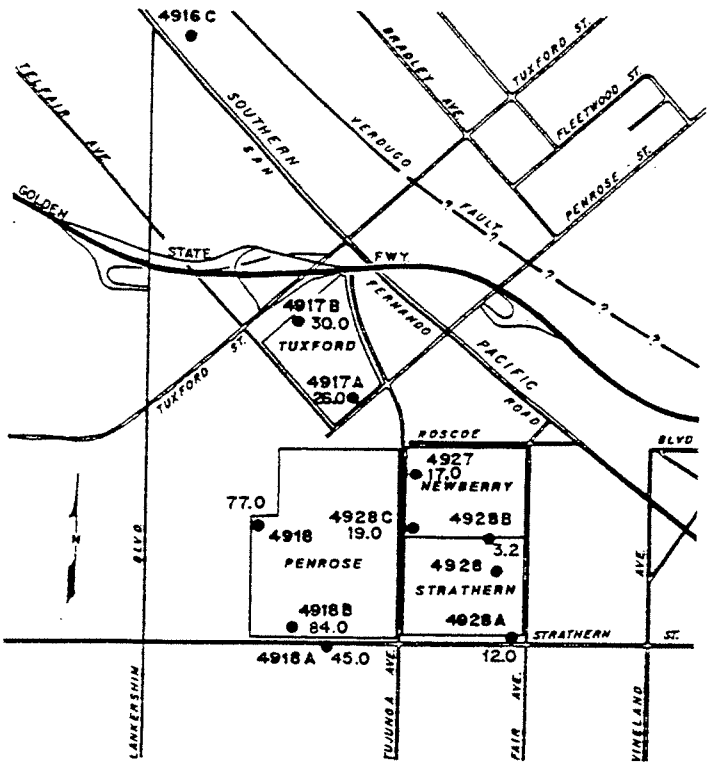
Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 16

AREAL NO_3 DISTRIBUTION
JULY 1988

The highest nitrate levels are mainly found on the west side of Tujunga.



EXPLANATION

4919 ● Monitoring Well location and number

19.0 Nitrate concentration in milligrams per liter

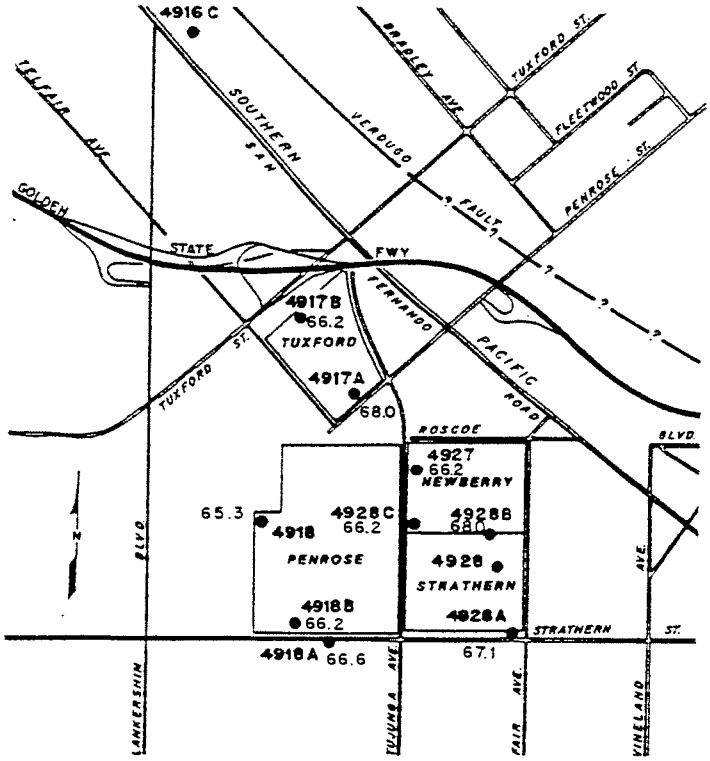
Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 17

AREAL NO_3 DISTRIBUTION
NOVEMBER 1988

Levels are droping at 4918 and continue to increase at 4918A and 4918B. Increasing levels are seen at 4917A and 4917B in the Tuxford area.



EXPLANATION

4919 ● Monitoring Well location and number

66.2 Temperature in degrees Fahrenheit

Base map from U.S. Geological Survey 7.5 minute Van Nuys and Burbank Topographic Quadrangles, 1972.

0 2000
feet

Figure 18

AREAL TEMPERATURE DISTRIBUTION
JULY 1988

This areal distribution map reveals that a slight elevation in temperature occurs as ground water passes beneath the waste sites.

The natural decay of landfill material generates a great amount of heat that is transferred into the surrounding bedrock and is eventually transmitted to the ground water.

SURFACE WATER

No surface runoff samples were required at the sites because both pit type landfills are inactive and covered. Penrose is covered with an interim soil cap and Newberry has an auto salvage yard above it. The runoff would not be representative of landfill influence.

LYSIMETER RESULTS

Two lysimeters, one at the Penrose Landfill and one downgradient of the Strathern pit, were installed in April 1988. Repeated attempts have been made to obtain samples from the two lysimeters with no success. We attribute this to the extremely adverse conditions where the lysimeters were installed. These instruments are not physically capable of extracting pore water from sand, gravel, and boulders. The instruments can develop up to about 6 atmospheres of vacuum, but pore water is held at 15 to 20 atmospheres in these materials. Therefore, these instruments are not likely to operate in this environment.

GAS MIGRATION

There is no apparent threat to ground water from gas or leachate migration coming from the Penrose and Newberry Landfills.

Gas is effectively controlled at the Penrose Landfill by the collection system. There is no evidence of leachate production at Penrose and Newberry and the trash appears to be unsaturated.

REMEDIAL ACTION

We recommend continued maintenance and adjustments of the gas collection system at the Penrose Landfill and maintenance of the interim cover. Excessive ponding of water should also be avoided at the Newberry site.

- o0o -

If you have any questions, or if we can clarify anything over the phone, please call Alice Campbell at Law Environmental, Inc. (818) 848-0214.

Yours very truly,

LAW ENVIRONMENTAL, INC.

by
Vincent Richards, R.G. 4627
Project Geologist

by
Alice Campbell, C.E.G. 1157
Hydrogeologist

by
Glenn A. Brown, C.E.G. 3
Senior Vice President

VR/pr/7420SWT.RPT

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818-848-0214

JOB NO. 58-7420 SHEET 1 OF 1
JOB NAME Penrose SWAT
BY V.R DATE 6-14-89
CHECKED BY [illegible] DATE 6-22-89

VELOCITY CALCULATION

$$V = \frac{Ki}{\alpha}$$

α - effective porosity
K = permeability
i = gradient

Using 1988 WELL DEVELOPMENT TEST DATA which is in the Penrose SWAT Report dated June 1988

Assume $K = 218$ ft/day

$\alpha = 0.20$

See Figure 1 i = 6' drop in water over 1300'

$= 4.6 \times 10^{-3}$

$\therefore$

$$V = \frac{218 \cdot 4.6 \times 10^{-3}}{0.20}$$

V = about 5 ft/day $\times$ 365 days/yr

V = about 1800 ft/year

004394

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GROUND WATER DATABASE REV: *****

		WAT LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES (ppm)						GENERAL MINERAL(ppm)						
POINT	DATE	REF PT.	W S E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS
4928	11-Feb-83	NA							550	7.6	79	17	28.5	4.9	0.0	248	64	21.1	2.0		0.43	373
4928	02-Apr-84	NA								8.1	86	21	30.0	5.0	0.0	270	62	28.0	0.9		0.44	407
4918	19-Jun-85	827.13	554.66	7.0	65	720	22.5	160	760	7.3	90	25	41.0	5.2	0.0	240	60	35.0	120.0			470
4918	17-Jul-85	827.13	553.67	7.1	66	690	17.5	263	760	7.1	93	23	35.0	5.5	0.0	290	53	37.0	110.0			450
4918	14-Aug-85	827.13	552.13	6.8	68	620	5.5		760	7.7	120	20	24.0	5.1	0.0	260	47	35.0	64.0	0.3	0.38	450
4918	19-Sep-85	827.13	549.65	6.4	65	230	21.0	220	740	7.0	130	22	23.0	4.1	0.0	260	49	39.0	130.0			470
4918	16-Jan-86	827.13	543.32	7.4	64	790		235	790	7.4	150	20	26.0	4.8	0.0	260	30	55.0	120.0			470
4918	29-Apr-86	827.13	545.30	6.8	66	600	14.0	224	740	7.8	150	19	26.0	5.0	0.0	280	30	34.0	74.0			500
4918	22-Jul-86	827.13	547.42	7.4	67	700	16.0	220	810	7.7	135	21	26.0	36.0	0.0	240	27	33.0	72.0			470
4918	15-Oct-86	827.10	544.90	6.2	66	700	21.0	193	800	7.9	96	23	28.0	4.3	0.0	230	57	51.0	84.0	0.2	0.40	465
4918	14-Jan-87	827.10	542.70	6.9	63	600	17.0	200	800	7.4	100	23	31.0	5.2	0.0	276	60	33.0	83.0	0.4	0.40	510
4918	15-Apr-87	827.10	541.10	5.6	63	600	9.0	200	800	7.4	100	24	28.0	5.1	<0.6	284	62	31.0	87.0	0.3	0.40	490
4918	24-Jul-87	827.10	536.68	7.6	66	700	17.5	200	820	7.3	100	26	29.0	5.3	<0.6	290	52	35.0	86.0			500
4918	21-Oct-87	827.10	530.60	7.2	64	575	23.5	230	880	7.6	110	25	29.0	5.7	<0.6	320	57	34.0	130.0	0.25	0.30	510
4918	29-Apr-88	826.10	522.65	7.5	64	700	7.0	262	840	7.8	110	27	27.0	4.70	<0.6	310	58	35.0	88.0	0.4	0.13	500
4918	28-Jul-88	826.10	522.45	7.3	65.3	390	16.0	300	810	7.5	110	23	26.0	4.3	<0.6	320	52	38.0	81.0	0.19	0.40	540
4918	08-Nov-88	826.10	513.91	7.3	63	850	15.0	364	900	7.4	120	31	35.0	5.3	<0.6	365	55	34.0	77.0	0.17	0.30	550
4918	07-Feb-89	826.10	508.44	7.3	63	820	14.0	344	850	7.5	110	24	29.0	4.5	<0.6	330	61	31.0	84.0	<0.02	0.40	500
4918A	31-Dec-84	804.77								8.0	64	7	26.0	3.0	0.0	199	58	16.0	13.0		0.47	340
4918A	19-Jun-85	804.77	548.00	11.0	70	400	0.0	40	460	10.3	13	<0.01	59.0	15.0	2.3	34	47	46.0	28.0			230
4918A	17-Jul-85	804.77	545.77	8.0	70	340	0.0	50	370	9.9	10	0	53.0	13.0	0.0	26	55	44.0	12.0			220
4918A	14-Aug-85	804.77	545.42	7.7	70	320	0.0		340	9.0	12	<2.2	44.0	13.0	6.7	16	64	46.0	<0.	0.4	0.32	200
4918A	19-Sep-85	804.77	542.35	9.9	64	490	0.0	41	350	9.1	13	0	43.0	8.8	5.3	32	43	41.0	18.0			220
4918A	16-Jan-86	804.77	536.67	10.4	65	310		30	310	10.4	2	0	47.0	13.0	12.0	26	24	38.0	<4.43			190
4918A	29-Apr-86	804.77	539.98	10.5	71	340	0.0	17	370	7.5	9	0	46.0	14.0	0.0	51	25	38.0	<4			200
4918A	22-Jul-86	804.77	541.25	7.0	71	450	33.0	167	430	6.2	17	4	47.0	14.0	0.0	95	25	38.0	0.7			210
4918A	15-Oct-86	804.77	539.10	5.8	70	430	70.0	190	410	6.9	17	5	52.5	12.0	0.0	130	12	52.0	1.2	0.2	0.20	250
4918A	14-Jan-87	804.77	537.80	6.4	68	350	40.0	171	400	6.8	20	7	54.0	13.0	0.0	179	<1	36.0	<0.4	0.3	0.20	230
4918A	15-Apr-87	804.77	535.85	5.5	67	500	108.0	290	520	6.2	29	8	53.0	16.0	<0.6	200	<1	36.0	0.7	0.4	0.10	310
4918A	24-Jul-87	804.77	531.23	7.2	73	700	28.0	365	500	6.7	34	10	55.0	15.0	<0.6	230	<1	37.0	0.8			280
4918A	29-Oct-87	804.77	524.30	6.9	67	650	221.0	330	550	6.5	43	12	52.0	18.0	<0.6	270	6	33.0	0.9			320
4918A	29-Apr-88	805.21	516.48	8.0	64	380	7.0	197	580	7.7	70	25	25.0	3.8	<0.6	240	60	17.0	17.0	0.4	0.14	350
4918A	28-Jul-88	805.21	517.81	6.9	66.6	900	140.0	455	1000	6.9	140	30	35.0	6.0	<0.6	510	53	36.0	54.0	0.18	0.30	660
4918A	08-Nov-88	805.21	510.05	7.4	70	1020	50.0	520	1100	7.2	160	42	47.0	6.5	<0.6	570	57	35.0	45.0	0.16	0.20	680
4918A	07-Feb-89	805.21	504.88	7.5	63	520	7.0	240	580	7.6	68	16	26.0	3.7	<0.6	230	62	16.0	21.0	0.07	0.40	340
4927	17-Oct-84	827.58							900	7.0	80	30	40.0	5.1	0.0	400	70	20.0	10.0			500
4927	19-Jun-85	827.58	554.91																			
4927	17-Jul-85	827.58	553.89	6.9	66	710	50.0	400	850	6.9	110	28	39.0	6.2	0.0	480	56	43.0	8.2			550
4927	14-Aug-85	827.58	552.46	7.0	69	750	15.0		770	7.4	100	23	29.0	5.5	0.0	380	49	23.0	<0.	0.4	0.25	460
4927	19-Sep-85	827.58	549.96	6.4	67	750	24.0	354	760	7.0	130	23	26.0	4.0	0.0	370	50	13.0	32.0			490
4927	16-Jan-86	827.58	543.57	7.2	66	700		285	700	7.2	98	19	28.0	4.9	0.0	310	31	20.0	20.0			430
4927	29-Apr-86	827.58	544.93	6.6	66	480	9.0	186	570	7.8	94	14	25.0	4.6	0.0	232	30	20.0	14.0			400
4927	22-Jul-86	827.58	547.48	6.4	64	580	16.0	231	650	7.5	83	18	30.0	5.4	0.0	230	40	33.0	14.0			390
4927	15-Oct-86	827.60	545.00	6.1	66	620	23.5	230	730	7.6	84	22	34.0	3.6	0.0	280	52	38.0	6.2	0.3	0.40	410
4927	14-Jan-87	827.60	542.80	6.8	65	500	23.0	240	700	7.2	91	21	30.0	4.7	0.0	310	63	23.0	15.0	0.4	0.30	430
4927	15-Apr-87	827.60	541.10	5.3	63	440	12.0	200	660	6.9	84	21	27.0	5.1	<0.6	290	72	20.0	16.0	0.3	0.30	410
4927	24-Jul-87	827.60	536.93	7.4	70	500	5.0	254	720	7.3	92	21	31.0	4.8	<0.6	320	65	22.0	13.0			430
4927	21-Oct-87	827.60	530.87	7.0	63	400	37.5	200	610	7.6	70	9	15.0	2.8	<0.6	260	61	20.0	16.0	0.24	0.30	370
4927	29-Apr-88	827.06	525.71	6.8	63.5	410	98.0	220	590	7.7	69	27	27.0	4.2	<0.6	230	68	19.8	15.0	0.16	0.30	361
4927	28-Jul-88	827.06	523.28	7.3	66.2	285	16.0	228	590	7.5	68	15	25.0	4.2	<0.6	240	58	21.0	15.0	0.19	0.30	360
4927	08-Nov-88	827.06	515.71	7.0	64	430	12.0	264	640	7.2	72	21	34.0	5.2	<0.6	270	64	20.0	17.0	0.19	0.20	390
4927	07-Feb-89	827.06	510.35	7.0	64	600	11.0	260	650	7.4	78	15	25.0	3.4	<0.6	270	65	21.0	19.0	0.05	0.30	380

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		ORGANICS (ppb)						TRACE ELEMENTS (ppm)											TRACE ELEMENTS (ppm)
POINT	DATE	COD	TOC	TOX	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn
4928	11-Feb-83											0.060	0.090		0.050				0.220
4928	02-Apr-84					0.93	5.40	0.500	0.001	0.005	0.001	0.010		0.010		0.010	0.010	0.005	0.185
4918	19-Jun-85	<0.50	<3		7	3	17.00					<0.086	0.090		<0.05				0.690
4918	17-Jul-85	<0.50	<3		36	7	<1					<0.09	0.080		<0.05				0.590
4918	14-Aug-85	<0.05	<3									<0.08	<0.046		<0.02				0.400
4918	19-Sep-85	<0.05	<3		5	7	<1					<0.035	<0.042		<0.022				0.041
4918	16-Jan-86	<0.05	<3		26	2	<1					<0.033	<0.063		<0.029				0.240
4918	29-Apr-86		<3		20	<1	<1					<0.02	<0.2		<0.01				0.320
4918	22-Jul-86	<0.05	<3		27	2	<1					<0.02	<0.01		<0.01				0.380
4918	15-Oct-86	<0.05	<3		33.5	1	<1		<0.02	<0.02	<0.01	<0.04	0.230	<0.0005	<0.003	<0.02		<0.02	0.260
4918	14-Jan-87	<0.05	<3		50	1	<1		<0.01	<0.02	<0.01	<0.03	0.070	<0.0005	<0.006	<0.02	<0.06	<0.02	0.150
4918	15-Apr-87	0.08	17.0		46	1	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560
4918	24-Jul-87	<0.05	<3		38	4	<1		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	<0.005	<0.02	<0.04	<0.02	0.160
4918	21-Oct-87	<0.05	<3		45	2	<1		<0.01	<0.01	<0.02	<0.02	0.150	<0.0008	<0.005	<0.01	<0.04	<0.02	0.130
4918	29-Apr-88	5.0		0.13	65	2	<1	<0.2	<0.02	<0.002	<0.02	<0.02	2.10	<.0008	0.018	0.006	<0.004	<0.004	1.100
4918	28-Jul-88	16.0		0.12	73	2	<1	<0.2		<0.002	<0.001	<0.02	0.06	<.0008	<0.005	<0.002	<0.04	<0.004	0.380
4918	08-Nov-88	<3		0.10	61	4	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	<0.005	<0.002	<0.04	<0.004	<0.03
4918	07-Feb-89	5.00		0.16	130	4	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.610	<0.0008	<0.005	0.005	<0.04	<0.004	0.340
4918A	31-Dec-84	<0.05			29	4			<0.001	<0.01	0.001	0.010	0.300	0.001	0.010	0.010	0.010	0.010	0.010
4918A	19-Jun-85	0.11	23.0		30	7	<1					<0.086	<0.09		<0.05				<0.021
4918A	17-Jul-85	0.50	18.0		5	3	4					<0.09	0.790		<0.05				<0.023
4918A	14-Aug-85	<0.05	18.0									<0.08	<0.046		<0.02				<0.008
4918A	19-Sep-85	<0.05	18.0		<1	7	6					<0.035	<0.042		<0.022				0.023
4918A	16-Jan-86	<0.05	16.0		8	12	10					<0.033	0.980		<0.029				<0.006
4918A	29-Apr-86		16.0		5	9	17					<0.02	<0.2		<0.01				<0.04
4918A	22-Jul-86	0.05	20.5		3	<1	22					<0.02	<0.2		0.310				<0.04
4918A	15-Oct-86	0.09	11.0		<1	3	24		<0.02	<0.02	<0.01	<0.04	54.00	<0.0005	0.540	<0.02		<0.02	<0.08
4918A	14-Jan-87	0.06	<3		<1	<1	8		<0.01	<0.02	<0.01	<0.03	<.03	<0.0005	0.310	<0.02	<0.06	<0.02	<0.08
4918A	15-Apr-87	<0.05	100.0		<1	3	5		<0.01	<0.01	<0.01	<0.02	85.00	<0.0008	0.470	<0.01	<0.04	<0.02	0.160
4918A	24-Jul-87	<0.05	26.0		<1	<1	20		<0.02	<0.03	<0.02	<0.02	47.00	<0.0008	0.440	<0.02	<0.04	<0.02	<0.03
4918A	29-Oct-87	<0.05	26.0		<1	<1	18		<0.02	<0.01	<0.02	<0.02	26.00	<0.0008	0.360	<0.01	<0.04	<0.02	0.210
4918A	29-Apr-88	8.0		0.08	68	6	<1	<0.2	<0.02	<0.002	<0.02	<0.02	3.60	<.0008	0.072	0.002	<0.004	<0.004	0.200
4918A	28-Jul-88	8.0		<0.08	2	11	<1	<0.2		<0.002	<0.001	<0.02	0.20	<.0008	0.031	<0.002	<0.04	<0.004	0.110
4918A	08-Nov-88	13.00		<0.08	2	6	<1	<0.2	<0.02	<0.002	0.005	<0.02	0.020	<0.0008	<0.005	<0.002	<0.04	<0.004	<0.03
4918A	07-Feb-89	5.00		0.18	95	15	<1	<0.2	>0.01	<0.002	<0.001	<0.02	0.840	<0.0008	0.012	0.004	<0.04	<0.004	0.200
4927	17-Oct-84					2						<0.06	0.050		0.035				0.014
4927	19-Jun-85																		
4927	17-Jul-85	<0.05	<3		<1	1	<1					<0.09	0.570		0.060				0.100
4927	14-Aug-85	<0.05	<3									<0.08	<0.046		<0.02				0.050
4927	19-Sep-85	<0.05	<3		<1	4	<1					<0.035	<0.042		0.033				0.052
4927	16-Jan-86	<0.05	<3		<1	2	<1					<0.033	<0.063		<0.029				0.034
4927	29-Apr-86		<3		<1	1	<1					<0.02	<0.2		<0.01				0.060
4927	22-Jul-86	<0.05	<3		<1	2	<1					<0.02	<0.2		<0.01				0.080
4927	15-Oct-86	<0.05	<3		<1	2	<1		<0.02	<0.02	<0.01	<0.04	0.75	<0.0005	1.400	<0.02		<0.02	<0.08
4927	14-Jan-87	<0.05	<3		<1	2	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	0.007	<0.02	<0.06	<0.02	<0.08
4927	15-Apr-87	<0.05	8.0		<1	1	<1		<0.01	<0.01	<0.01	<0.02	0.69	<0.0008	<0.005	<0.01	<0.04	<0.02	0.070
4927	24-Jul-87	<0.05	<3		<1	2	<1		<0.02	<0.01	<0.02	<0.02	<.02	<0.0008	0.006	<0.02	<0.04	<0.02	0.110
4927	21-Oct-87	<0.05	<3		<1	<1	<1		<0.01	<0.01	0.020	0.020	0.19	<0.0008	0.005	<0.01	<0.04	<0.02	<0.03
4927	29-Apr-88	<3		<0.08	<1	<1	<1	0.2	<0.02	<0.002	<0.02	<0.02	3.40	0.001	0.029	0.005	<0.004	<0.004	0.650
4927	28-Jul-88	<3		<0.08	<1	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	<0.005	<0.002	<0.04	<0.004	0.300
4927	08-Nov-88	<3		<0.08	2	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	<0.005	<0.002	<0.04	<0.004	0.130
4927	07-Feb-89	8.00		0.14	2	<1	<1	<0.2	<0.01	0.002	<0.001	<0.02	4.000	<0.0008	0.025	0.013	<0.04	<0.004	1.900

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GROUND WATER DATABASE REV: *****

POINT	DATE	REF PT.	W S E	FIELD MEASUREMENTS (ppm) FpH	T(F)	ECf	CO2	Alk	LABORATORY ANALYSES (ppm) EC	LpH	GENERAL MINERAL(ppm) Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS
		WAT LEV (ft.)																				
4928A	03-May-84	803.78								7.2	120	28	48.0	6.0	0.0	363	75	65.0	15.0		0.35	650
4928A	31-Dec-84	803.78							560	7.7	73	16	26.0	4.2	0.0	280	58	6.5	12.0			351
4928A	19-Jun-85	803.78	549.22	7.1	69	1100	89.0	506	1300	7.0	130	36	90.0	9.0	0.0	490	46	87.0	16.0			750
4928A	17-Jul-85	803.78	547.95	6.8	68	1180	102.0	480	1300	6.9	120	34	93.0	8.6	0.0	620	59	98.0	8.9			730
4928A	14-Aug-85	803.78	546.41	6.8	74	1250	22.5		1400	7.6	230	33	79.0	11.0	0.0	610	44	110.0	<0.	0.8	0.25	790
4928A	19-Sep-85	803.78	543.93	6.3	68	1250	40.5	555	1500	6.8	250	35	78.0	6.0	0.0	670	55	81.0	25.0			830
4928A	16-Jan-86	803.78	538.51	7.0	66	1400		180	1400	7.0	160	40	91.0	8.6	0.0	620	26	150.0	5.4			880
4928A	29-Apr-86	803.78	539.84	6.6	68	900	68.0	350	1100	7.8	170	27	63.0	7.6	0.0	488	27	75.0	<4			580
4928A	22-Jul-86	803.78	541.67	7.3	69	1200	66.0	460	1300	7.1	170	36	80.0	8.0	0.0	390	37	260.0	8.6			780
4928A	15-Oct-86	803.78	539.90	5.9	67	1200	26.0	470	1400	7.4	160	41	84.0	3.8	0.0	490	55	130.0	12.0	0.6	0.30	810
4928A	14-Jan-87	803.78	538.50	6.9	66	340	75.0	460	1400	7.0	160	38	82.0	7.6	0.0	590	54	120.0	12.0	0.8	0.30	820
4928A	15-Apr-87	803.78	536.86	5.8	69	1100	42.5	490	1500	6.8	170	44	85.0	6.6	<0.6	650	62	130.0	16.4	0.8	0.30	910
4928A	24-Jul-87	803.78	532.61	7.2	70	1200	35.0	515	1400	7.0	170	47	110.0	8.4	<0.6	630	58	140.0	13.0			840
4928A	21-Oct-87	803.78	526.40	6.9	66	760	34.5	436	1300	7.7	140	34	82.0	8.5	<0.6	590	56	83.0	19.0	0.63	0.30	760
4928A	29-Apr-88	803.10	518.58	8.0	66	950	32.0	203	1000	7.3	110	63	63.0	6.4	<0.6	480	61	50.0	23.0	0.3	0.34	600
4928A	28-Jul-88	803.10	518.82	7.4	67.1	450	37.0	385	900	7.4	99	24	51.0	5.6	<0.6	442	51	36.0	19.0	0.34	0.30	550
4928A	08-Nov-88	803.10	511.81	7.2	65	700	32.0	350	760	7.2	91	26	49.0	5.6	<0.6	370	56	23.0	12.0	0.22	0.20	450
4928A	07-Feb-89	803.10	507.20	7.0	66	700	35.0	360	720	7.2	92	21	35.0	4.5	<0.6	350	51	21.0	16.0	0.05	0.30	440
4928B	23-Oct-84	823.10							1000	7.1	110	20	100.0	5.4	0.0	470	60	40.0	19.0			620
4928B	19-Jun-85	823.10	552.73	8.4	70	900	66.0	392	870	7.1	82	24	92.0	6.3	0.0	450	53	38.0	39.0			560
4928B	17-Jul-85	823.10	551.71	6.8	74	800	60.0	310	900	6.9	82	24	84.0	6.2	0.0	450	68	40.0	20.0			520
4928B	14-Aug-85	823.10	550.29	7.2	72	850	13.0		860	7.8	120	20	65.0	7.2	0.0	390	56	37.0	12.0	0.4	0.32	530
4928B	19-Sep-85	823.10	547.87	6.5	70	740	30.5	350	820	6.9	130	23	49.0	3.3	0.0	380	61	33.0	36.0			510
4928B	16-Jan-86	823.10	541.82	7.2	68	750		321	750	7.2	107	22	36.0	4.4	0.0	340	28	25.0	26.0			460
4928B	29-Apr-86	823.10	542.86	6.7	71	520	18.0	255	600	8.0	120	17	30.0	5.2	0.0	341	30	20.0	7.0			320
4928B	22-Jul-86	823.10	545.14	7.3	70	620	30.0	270	700	7.4	110	20	37.0	4.4	0.0	290	29	22.0	6.9			420
4928B	15-Oct-86	823.10	543.10	6.0	68	690	33.5	255	680	7.6	87	10	29.0	4.2	0.0	280	60	35.0	15.0	0.3	0.30	440
4928B	14-Jan-87	823.10	541.32	6.7	66	500	16.5	240	700	7.3	88	21	35.0	4.2	0.0	340	51	18.0	5.3	0.5	0.40	420
4928B	15-Apr-87	823.10	539.63	6.2	65	450	25.0	250	680	7.0	80	22	33.0	4.0	<0.6	340	54	18.0	6.6	0.4	0.40	410
4928B	24-Jul-87	823.10	535.48	6.8	70	550	8.0	290	720	7.4	87	25	36.0	4.3	<0.6	350	50	24.0	6.8			430
4928B	21-Oct-87	823.10	529.40	6.9	66	465	65.0	291	740	7.9	90	22	35.0	5.0	<0.6	370	50	21.0	6.4	0.25	0.40	430
4928B	29-Apr-88	823.17	523.37	8.6	66.2	455	25.0	260	710	7.8	82	31	31.0	4.2	<0.6	356	52	20.0	2.9	0.18	0.40	400
4928B	28-Jul-88	823.17	521.77	7.4	68.0	335	25.0	336	680	7.5	85	20	30.0	3.9	<0.6	350	48	18.0	2.4	0.19	0.40	410
4928B	08-Nov-88	823.17	515.47	7.3	66	680	20.0	400	740	7.2	83	25	51.0	4.7	<0.6	380	53	18.0	3.2	0.16	0.30	430
4928B	07-Feb-89	823.17	511.00	6.6	66	670	23.0	372	680	7.3	85	24	36.0	4.6	<0.6	350	56	17.0	3.9	<0.02	0.40	400
4916C	19-Jun-85	878.00		7.1	72	510	7.0	175	570	7.7	57	25	37.0	4.5	0.0	220	51	18.0	30.0			350
4916C	17-Jul-85	878.00		7.2	74	460	6.5	179	520	7.5	56	15	34.0	3.8	0.0	0	71	20.0	10.0			290
4916C	14-Aug-85	878.00		7.1	68	490	2.5		520	7.7	88	13	26.0	3.8	0.0	200	73	14.0	15.0	0.3	0.60	330
4916C	19-Sep-85	878.00	565.13	6.6	62	500	6.0	205	510	7.4	66	13	24.0	3.0	0.0	180	50	6.7	34.0			320
4916C	16-Jan-86	878.00	556.79	7.7	66	430		180	430	7.7	69	13	26.0	3.9	0.0	200	33	16.0	23.0			320
4916C	09-Jan-87								540	7.8	84	16	30.0	4.1	<12	230	57	18.0	18.0			330
4916C	09-Apr-87			6.8	66	420	7.0	165	560	7.6	68	17	31.0	4.7	<0.6	220	61	21.0	21.0			330
4916C	29-May-87			7.3		510		200			65	17	27.0	4.0		200	44	18.4	1.4			310
4916C	26-Aug-87			7.2	66	500		190			62	16	32.0	4.0		190	67	25.0	3.8			370
4916C	20-Nov-87			7.6	64	443		170			65	17	31.0	4.0		170	82	32.0	4.5			380
4916C	02-Mar-88																					
4916C	10-May-88		538.00	7.2	64	500	36.0	154	594	7.5	65	17		4.1		180	89	31.0		0.20	0.50	370
4916C	09-Aug-88		534.00				16.0	143	590	8.2							43	27.0		0.20	0.50	385
4916C	02-Nov-88		528.12				20.0	122	499	8.1							78	38.0		0.20	0.50	305
4916C	23-Feb-89		523.72	7.0	62	601	19.0	125									77	29.0		0.30	0.50	410
4928C	29-Apr-88	823.37	524.22	7.4	65.3	425	6.0	205	610	7.6	71	27	27.0	4.3	<0.6	240	66	20.0	18.0	0.13	0.30	370
4928C	28-Jul-88	823.37	524.27	7.4	66.2	285	19.0	214	590	7.4	73	16	25.0	4.1	<0.6	240	57	20.0	19.0	0.16	0.30	370
4928C	08-Nov-88	823.37	516.83	7.1	65	410	22.0	248	630	7.4	76	21	33.0	4.4	<0.6	260	61	20.0	19.0	0.20	0.20	380

Note: NA= not available

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		ORGANICS (ppb)						TRACE ELEMENTS (ppm)												
POINT	DATE	COD	TOC	TOX	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOU
4928A	03-May-84					1	8.8	0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010	B&C
4928A	31-Dec-84				44	5.3						<0.09	0.220		<0.04				<0.015	B&C
4928A	19-Jun-85	<0.05	8.0		<1	1	3					<0.086	<0.09		0.290				0.670	B&C
4928A	17-Jul-85	0.06	7.5		<1	1	2					<0.09	0.060		0.240				0.600	B&C
4928A	14-Aug-85	<0.05	120.0									<0.08	<0.046		0.230				0.600	B&C
4928A	19-Sep-85	<0.05	14.0		37	2	2					<0.035	<0.042		0.260				0.800	B&C
4928A	16-Jan-86	<0.05	20.0		<1	1	2					<0.033	<0.063		0.390				0.650	B&C
4928A	29-Apr-86		29.0		<1	<1	<1					<0.02	<0.2		0.320				0.700	B&C
4928A	22-Jul-86	0.11	5.0		<1	2	<1					<0.02	<0.2		0.400				0.490	B&C
4928A	15-Oct-86	<0.05	3.0		<1	3	1		<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520	B&C
4928A	14-Jan-87	<0.05	10.0		<1	<1	<1		<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520	B&C
4928A	15-Apr-87	<0.05	18.0		<1	<1	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560	B&C
4928A	24-Jul-87	<0.05	20.0		<1	2	1		<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480	B&C
4928A	21-Oct-87	<0.05	17.0		<1	2	<1		<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350	B&C
4928A	29-Apr-88	11.0		0.12	<1	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.32	<.0008	0.400	0.004	<0.004	<0.004	0.550	B&C
4928A	28-Jul-88	10.0		<0.08	<1	1	1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.320	<0.002	<0.04	<0.004	0.410	B&C
4928A	08-Nov-88	<3		<0.08	<1	<1	1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	0.013	<0.002	<0.04	<0.004	0.250	B&C
4928A	07-Feb-89	<5		0.18	<1	2	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.920	<0.0008	0.082	0.007	<0.04	<0.004	0.530	B&C
4928B	23-Oct-84					4						<0.06	<0.08		2.200				0.082	B&C
4928B	19-Jun-85	<0.05	4.0		<1	<1	<1					<0.086	<0.09		2.270				0.077	B&C
4928B	17-Jul-85	0.06	6.1		<1	<1	3					<0.09	<0.06		2.400				0.081	B&C
4928B	14-Aug-85	<0.05	<3									<0.08	<0.046		2.500				0.050	B&C
4928B	19-Sep-85	<0.05	<3		<1	3	<1					<0.035	<0.042		2.400				0.067	B&C
4928B	16-Jan-86	<0.05	<3		<1	<1	<1					<0.033	<0.063		1.700				0.051	B&C
4928B	29-Apr-86		<3		<1	1	<1					<0.02	<0.2		1.300				0.070	B&C
4928B	22-Jul-86	0.12	6.0		<1	3	<1					<0.02	<0.2		1.100				0.050	B&C
4928B	15-Oct-86	<0.05	<3		<1	<1			<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310	B&C
4928B	14-Jan-87	0.10	<3		<1	2	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08	B&C
4928B	15-Apr-87	0.08	11.0		<1	2	<1		<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.030	B&C
4928B	24-Jul-87	<0.05	<3		<1	4	1		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.040	B&C
4928B	21-Oct-87	<0.05	<3		<1	<1	<1		<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.030	B&C
4928B	29-Apr-88	7.0		<0.08	<1	3	<1	0.2	<0.02	<0.002	<0.02	<0.02	5.70	<.0008	1.100	0.013	<0.004	<0.004	0.680	B&C
4928B	28-Jul-88	6.0		<0.08	<1	4	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.980	<0.002	<0.04	<0.004	0.170	B&C
4928B	08-Nov-88	<3		<0.08	<1	4	<1	<0.2	<0.02	<0.002	<0.001	<0.02	0.040	<0.0008	1.000	<0.002	<0.04	<0.004	0.080	B&C
4928B	07-Feb-89	<5		0.24	1	5	<1	<0.2	<0.01	<0.002	<0.001	<0.02	2.200	<0.0008	0.920	0.003	<0.04	<0.004	0.360	B&C
4916C	19-Jun-85	<0.05	3.0		<1	18	<1					<0.086	<0.09		<0.05				<0.021	B&C
4916C	17-Jul-85	0.06	5.8		<1	14	<1					<0.09	<0.06		<0.05				<0.023	B&C
4916C	14-Aug-85	<0.05	<3									<0.08	<0.046		<0.02				<0.008	B&C
4916C	19-Sep-85	<0.05	<3		37	16	<1					<0.035	<0.042		<0.022				0.029	B&C
4916C	16-Jan-86	<0.05	<3		<1	16	<1					<0.033	<0.063		<0.029				0.008	B&C
4916C	09-Jan-87				<1	5	<1					<0.03	<0.03		<0.004				<0.08	W.M.
4916C	09-Apr-87		<3		<1	10	<1	<0.1	<0.01		<1	<0.02	<0.02	0.20		<0.005	<0.2	<0.04	<1	<0.03	W.M.
4916C	29-May-87		36.50			<4.1											<0.005			<0,020	W.M.
4916C	26-Aug-87		1.80			9											<0.005			0.043	W.M.
4916C	20-Nov-87		1.90			9											0.0074			0.027	W.M.
4916C	02-Mar-88																				W.M.
4916C	10-May-88	11		<0.005	<1.9	<4.1							0.50		<0.01	<0.005					W.M.
4916C	09-Aug-88			0.009	<5	<5	<5						0.40		<0.01						W.M.
4916C	02-Nov-88	<5		0.03	<5	<5	<5		<0.01	<0.005	<0.001	0.03	0.20	<0.001	<0.01		<0.1	<0.001	0.05	W.M.
4916C	23-Feb-89	5		0.02	<5	7	<5						0.10		0.01					W.M.
4928C	29-Apr-88	<3		<0.08	3	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.64	<.0008	0.008	0.002	<0.004	<0.004	0.270	B&C
4928C	28-Jul-88	<3		<0.08	8	<1	<1	<0.2		<0.002	<0.001	<0.02	<0.02	<.0008	0.008	<0.002	<0.04	<0.004	0.160	B&C
4928C	08-Nov-88	<3		0.13	8	<1	<1	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<0.0008	<0.005	<0.002	<0.04	<0.004	<0.03	B&C

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GROUND WATER DATABASE REV: *****

		WAT LEV (ft.)		FIELD MEASUREMENTS (ppm)			LABORATORY ANALYSES (ppm)				GENERAL MINERAL(ppm)									
POINT	DATE	REF PT.	W S E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS
4928C	07-Feb-89	823.37	511.54	7.2	66	620	16.0	236	620	7.3	82	16	26.0	3.5	<0.6	240	65	21.0	22.0	0.06	0.30	390
4918B	29-Apr-88	810.38	519.73	7.5	64.4	700	9.0	248	840	7.6	100	27	27.0	4.6	<0.6	310	54	35.0	84.0	0.13	0.50	490
4918B	28-Jul-88	810.38	519.65	7.3	66.2	395	14.0	295	830	7.5	110	22	25.0	5.2	<0.6	320	49	36.0	82.0	0.17	0.40	510
4918B	08-Nov-88	810.38	510.88	7.3	64	880	15.0	380	920	7.6	120	32	34.0	5.4	<0.6	370	57	35.0	84.0	0.17	0.30	550
4918B	07-Feb-89	810.38	505.65	7.2	64	900	20.0	356	900	7.4	120	29	33.0	5.4	<0.6	350	59	35.0	92.0	0.02	0.30	540
4917A	29-Apr-88	832.80	525.57	7.2	66.2	465	5.0	263	700	7.5	83	29	29.0	4.6	<0.6	310	57	20.0	26.0	0.16	0.30	410
4917A	29-Jul-88	832.80	525.24	7.2	68.0	380	26.0	320	680	7.4	90	18	28.0	4.5	<0.6	312	52	20.0	25.0	0.15	0.30	400
4917A	08-Nov-88	832.80	518.09	7.2	66.2	620	32.0	320	710	7.4	90	23	35.0	5.4	<0.6	230	54	19.0	26.0	0.18	0.30	430
4917A	07-Feb-89	832.80	512.28	7.3	65.3	700	30.0	328	720	7.2	93	18	28.0	4.1	<0.6	320	65	20.0	26.0	0.14	0.30	430
4917B	29-Apr-88	848.69	530.59	7.4	64.4	440	5.0	198	630	7.8	76	26	26.0	4.2	<0.6	230	70	20.0	26.0	0.15	0.40	380
4917B	29-Jul-88	848.69	528.27	7.4	66.2	350	13.0	214	610	7.5	76	17	26.0	4.2	<0.6	240	66	20.0	28.0	0.17	0.40	370
4917B	08-Nov-88	848.69	520.42	7.6	64.4	420	7.0	256	590	7.4	72	18	31.0	4.7	<0.6	230	54	17.0	30.0	0.20	0.30	360
4917B	07-Feb-89	848.69	514.48	6.9	63.5	540	7.0	240	580	7.4	66	13	22.0	3.2	<0.6	230	56	16.0	34.0	0.45	0.30	340
	maximum	565.12		11	74	1400	221	555	1500	10.4	250	63	110	36	12	670	89	260	130	0.84	0.6	910
	minimum	504.88		5.3	62	230	0	17	310	6.2	2.1	0	15	2.8	0	0	0	6.5	0	0	0	190
	mean	533.62		7.143	66.6	623.4	28.82	268.	755.3	7.47	92.9	21.5	41.08	6.236	0.24	307.5	51.9	38.09	28.47	0.2686	0.328	451.4
	std dev	14.160		0.854	2.70	245.3	31.81	110.	262.7	0.61	41.8	10.1	20.41	4.165	1.40	137.7	16.2	33.98	32.10	0.1795	0.101	152.0
	coef of v	0.0265		0.119	0.04	0.393	1.103	0.41	0.347	0.08	0.45	0.47	0.496	0.668	5.83	0.447	0.31	0.892	1.127	0.6685	0.307	0.336

Note: NA= not available

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		ORGANICS (ppb)						TRACE ELEMENTS (ppm)												TRACE ELEMENTS (ppm)
POINT	DATE	COD	TOC	TOX	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn	SOURC
4928C	07-Feb-89	8		0.23	5	2	<1	<0.2	<0.01	<0.02	<0.001	<0.02	0.840	<0.0008	<0.005	0.003	<0.04	<0.004	0.150	B&C
4918B	29-Apr-88	4		<0.08	28	4	<1	<0.2	<0.02	<0.002	<0.02	<0.02	1.60	<.0008	0.008	<0.002	<0.004	<0.004	0.060	B&C
4918B	28-Jul-88	<3		<0.08	35	5	<1	<0.2		<0.002	<0.001	<0.02	0.02	<.0008	<0.005	<0.002	<0.04	<0.004	0.080	B&C
4918B	08-Nov-88	10		0.12	38	5	<1	<0.2	<0.02	<0.002	0.000	<0.02	0.220	<0.0008	<0.005	<0.002	<0.04	<0.004	0.250	B&C
4918B	07-Feb-89	6		0.14	52	4	<1	<0.2	<0.01	0.002	<0.001	<0.02	0.180	<0.0008	<0.005	0.005	<0.04	<0.004	0.260	B&C
4917A	29-Apr-88	9.6		0.09	98	<1	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.80	<.0008	0.012	<0.002	<0.004	<0.004	0.130	B&C
4917A	29-Jul-88	8		0.14	200	<1	<1	<0.2		<0.002	<0.001	<0.02	0.22	<.0008	<0.005	<0.0008	<0.04	<0.004	0.080	B&C
4917A	08-Nov-88	10		0.20	170	<5	<5	<0.2	<0.02	<0.002	<0.001	<0.02	<0.02	<.0008	<0.005	<0.002	<0.04	<0.004	0.120	B&C
4917A	07-Feb-89	<5		0.17	180	<1	<1	<0.2	<0.01	<0.002	<0.001	<0.02	1.60	<.0008	<0.005	0.010	<0.04	<0.004	0.590	B&C
4917B	29-Apr-88	4		<0.08	25	12	<1	<0.2	<0.02	<0.002	<0.02	<0.02	0.63	<.0008	0.011	0.005	<0.004	<0.004	0.300	B&C
4917B	29-Jul-88	12		<0.08	38	16	<1	<0.2		<0.002	<0.001	<0.02	0.02	<.0008	<0.005	<0.0008	<0.04	<0.004	0.160	B&C
4917B	08-Nov-88	10		<0.08	<1	2	<1	<0.2	<0.02	<0.002	0.002	<0.02	0.02	<.0008	<0.005	<0.002	<0.04	<0.004	0.150	B&C
4917B	07-Feb-89	<5		0.12	<1	3	<1	<0.2	<0.01	<0.002	<0.001	<0.02	0.74	<.0008	<0.005	0.005	<0.04	<0.004	0.490	B&C
maximum		16	120	0.24	200	18	24	0.5	0.001	0.005	0.02	0.06	85	0.01	2.5	0.013	0.05	0.01	1.9	
minimum		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
mean		2.031	9.780	0.071	18.82	3.332	1.822	0.035	0.0000	0.0002	0.0004	0.0016	2.2539	0.0003	0.3225	0.0017	0.0011	0.0002	0.2200	
std dev		3.850	19.72	0.078	37.81	4.119	4.9118	0.1152	0.0001	0.0009	0.0025	0.0081	10.587	0.0017	0.5962	0.0033	0.0065	0.0014	0.2812	
coef of v		1.895	2.016	1.097	2.008	1.236	2.6958	3.2919	5.2915	4.3389	5.4965	5.0037	4.6973	5.1741	1.8488	1.9316	5.7587	4.9117	1.2781	

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CHAIN OF CUSTODY RECORD

BC Log Number _____

Client name: L.A. BY PRODUCTS	Job number or Purchase Order number: 58-7420
Project name: PENROSE SWAT Feburary 1989	
Project manager: Alice Campbell	Sampler(s): Vince Richards

Analyses required

Sample number	Date sampled	Time sampled	Matrix Type	Sample description	Number of containers	Gen Min - S or Al	Metals - B + Fl	621/625	Oil - Grease	COD	TOX	NO3	Hazardous sample Special handling required	Remarks
1	2-7-89	2:00	GW	4918		X	X	X	X	X	X	X		
2	↓	1:00	↓	4918A ✓		↓	↓	↓	↓	↓	↓	↓	↓	
3	↓	1:30	↓	4918B ✓		↓	↓	↓	↓	↓	↓	↓	↓	Invoice
4	↓	8:00	↓	4927		↓	↓	↓	↓	↓	↓	↓	↓	L.A. BY Products
5	↓	12:30	↓	4928A		↓	↓	↓	↓	↓	↓	↓	↓	Los Angeles
6	↓	11:30	↓	4928B		↓	↓	↓	↓	↓	↓	↓	↓	
7	↓	10:30	↓	4928C		↓	↓	↓	↓	↓	↓	↓	↓	Result
														LAW ENVIR.
														Burbank CA

	Signature	Company	Date	Time
Relinquished by	Vincent M. Richards	LAW ENVIRONMENTAL	2-7-89	4:17
Received by	[illegible]	BC Lab. Rec.	2/7/89	4:17
Relinquished by				
Received by				
Relinquished by				
Received by				

BROWN AND CALDWELL Analytical Laboratories

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed

004401

November 1988 **CHAIN OF CUSTODY RECORD**

BC Log Number [illegible]

Client name: L.A. By Products	Project or PO#: 58-7420
~~Address~~ Project Name: Penrose SWAT	Phone #:
~~City, State, Zip~~ Project: ALICE CAMBELL	~~Report attention~~ Sampler: Vince Richards

Analyses required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	625 + 624	Gen Min B+F	TOX	COD	METALS	NO3	Oil & Grease	Hazardous sample Special handling required	Remarks
1	11-8-88	1112	GW	4918	10	↓	↓	↓	↓	↓	↓	↓		Send Results
2	↓	1320	↓	4918A	↓	↓	↓	↓	↓	↓	↓	↓		to:
3	↓	1250	↓	4918B	↓	↓	↓	↓	↓	↓	↓	↓		LAW ENVIRONMENTAL
4	↓	0746	↓	4927	↓	↓	↓	↓	↓	↓	↓	↓		3420 N. San Fernando Blvd
5	↓	1015	↓	4928A	↓	↓	↓	↓	↓	↓	↓	↓		Burbank, CA
6	↓	1215	↓	4928B	↓	↓	↓	↓	↓	↓	↓	↓		
7	↓	0900	↓	4928C	↓	↓	↓	↓	↓	↓	↓	↓		ATTEN: ALICE CAMBELL

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	Vincent M. Richards	Law Environmental	11-8-88	3:54 pm
Received by	Cindy Zicker	CINDY ZICKER	CAL PASA	11/8/88	3:54 pm
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BROWN AND CALDWELL LABORATORIES

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ Aqueous HA Hazardous SL Sludge GW Groundwater SO Soil OT Other PE Petroleum

004402

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CHAIN OF CUSTODY RECORD

BC Log Number _____

Client name	Job number or Purchase Order number
LAW ENVIRONMENTAL	28-7420

Project name: Penrose Stat - July 1988

Project manager: _____ Sampler(s): VINCENT RICHARDS

Sample number	Date sampled	Time sampled	Matrix Type	Sample description	Number of containers	Analyses required: 6M-BTEX	10-K	8240	8270	8010 624+625	8270 PCP+PHENOL	6010 Cd, Cr, Pb + TTLC	Hazardous sample / Special handling required	Remarks
1	7-28	8:45	GW	4918 -1	11	X	X	X	X	X	X	X		
2	7-28	3:00	GW	4918A -2	11	X	X	X	X	X	X	X		
3	7-28	4:18	GW	4918B -3	11	↓	↓	↓	↓	↓	↓	↓		Send results
4	7-28	1032	GW	4927 -4	11									to Mike
5	7-28	2:00	GW	4928A -5	11									Mitchell
6	7-28	1:00	GW	4928B -6	11									
7	7-28	12:00	GW	4928C -7	11									Send Bill
														to L.A.
														By Products
														Metals see attached
														sheet

	Signature	Company	Date	Time
Relinquished by	Vincent M. Richards	LAW ENVIRONMENTAL	7-28	4:14
Received by	[illegible]	BrC Labs	7/28	4:14
Relinquished by				
Received by				
Relinquished by				
Received by				

BROWN AND CALDWELL Analytical Laboratories

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 320 South Fair Oaks Avenue, Pasadena, CA 91105 (213) 681-4655

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

Hazardous samples will be returned to client or disposed

004403

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APRIL 88 **CHAIN OF CUSTODY RECORD** 799-1438 BC Log Number [illegible]

Client name: LAW ENVIRONMENTAL	Project or PO#: 58-7420
Address: 3420 N. San Fernando #200	Phone #: 818 848 0214
City, State, Zip: Burbank CA	Report attention: ALICE CAMBELL

Sampled by: VR + SM.

Lab Sample number	Date sampled	TYPE ~~Time sampled~~	~~Type~~ ~~See key below~~ TIME	Sample description	Number of containers	TOX	COD	Oil & Grease	624/625	CAM METALS F+B	GEN MIN. AL+SI	NO3	Hazardous sample Special handling required	Remarks
	4/29	GW	2:30	NEWBERRY 4928B	9	X	X	X	X	X	X	X		
	4/29	↓	3:00	STRATHERN 4928A	9	X	X	X	X	X	X	X		
	4/29	↓	11:00 ~~10:00~~	Penrose 4918	9	X	X	X	X	X	X	X		
	4/29	↓	1:35 ~~2:30~~	DWP ~~Penrose~~ 4918 A	9	X	X	X	X	X	X	X		
	4/29	↓	7:30	WRECKING YARD ~~Strathern~~ 4927	9	X	X	X	X	X	X	X		
	4/29	↓	8:30	~~Tuxford Well #7~~	9	X	X	X	X	X	X	X		
	4/29	↓	9:30	~~Tuxford Well #6~~	9	X	X	X	X	X	X	X		
	4/29	↓	12:00	Penrose Well #5	9	X	X	X	X	X	X	X		
	4/29	↓	10:00	Newberry Well #8 · BATCH PLANT	9	X	X	X	X	X	X	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	V. Richards	Vince Richards	LAW ENVIRONMENTAL	4/29/88	4:45
Received by	S Milcar	Susi Milcar	B+C labs	4/29/88	4:45pm
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BROWN AND CALDWELL LABORATORIES

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

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004404

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BROWN AND CALDWELL LABORATORIES

373 SOUTH FAIR OAKS AVENUE, PASADENA, CA 91105
(818) 795-7553 (213) 681-4655

FAX: (818) 795-857

ANALYTICAL REPORT

LOG NO: P89-02-127

Received: 07 FEB 89
Reported: 23 FEB 89

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-1	4918	07 FEB 89
02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
Chemical Oxygen Demand, mg/L	5	5	6	8	<5
Oil and Grease, mg/L	<5	<5	11	<5	<5
Fluoride, mg/L	0.4	0.4	0.3	0.3	0.3
Total Organic Halides (TOX), mg/L	0.16	0.18	0.14	0.14	0.18
Aluminum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Boron, mg/L	<0.02	0.07	0.02	0.05	0.05
Silicon, mg/L	11	11	11	13	13
Antimony, mg/L	37	35	33	40	40
Arsenic, mg/L	<0.002	<0.002	0.002	0.002	<0.002
Barium, mg/L	0.092	0.057	0.10	0.084	0.096
Beryllium, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium, mg/L	<0.008	<0.008	<0.008	<0.008	0.009
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	0.005	0.004	0.005	0.013	0.007
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Silver, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

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BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

FAX: (818) 795-8579

LOG NO: P89-02-127

Received: 07 FEB 89
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Alice Campbell
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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-1	4918	07 FEB 89
02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
B/N,A Ext.Pri.Poll. (EPA-625)					
Date Extracted	02/13/89	02/13/89	02/13/89	02/13/89	02/13/89
Date Analyzed	02/22/89	02/22/89	02/22/89	02/22/89	02/22/89
Dilution Factor, Times 1	1	1	1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methylnaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
2-Nitrophenol, ug/L	<10	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2-Chlorophenol, ug/L	<10	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50	<50	<50	<50

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

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02-127-1	4918	07 FEB 89
02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10	<10
3-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20	<20
4-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
4-Nitrophenol, ug/L	<25	<25	<25	<25	<25
4-Nitroaniline, ug/L	<50	<50	<50	<50	<50
Acenaphthene, ug/L	<10	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40	<40
Benzoic Acid, ug/L	<50	<50	<50	<50	<50
Benzyl Alcohol, ug/L	<20	<20	<20	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10	<10	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10	<10
Benzo(a)anthracene, ug/L	<10	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10	<10

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Project: 58-7420

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-1	4918	07 FEB 89
02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10	<10
Butylbenzylphthalate, ug/L	<10	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10	<10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25	<25
Dibenzofuran, ug/L	<10	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10	<10
Fluoranthene, ug/L	<10	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10	<10	<10	<10
Isophorone, ug/L	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10	<10
Nitrobenzene, ug/L	<10	<10	<10	<10	<10

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Project: 58-7420

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02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
Pentachlorophenol, ug/L	<10	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10	<10
Pyrene, ug/L	<10	<10	<10	<10	<10

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02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
Vol.Pri.Poll. (EPA-624)					
Date Analyzed	02/16/89	02/16/89	02/16/89	02/16/89	02/16/89
Dilution Factor, Times 1	1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1	<1
2-Hexanone, ug/L	<1	<1	<1	<1	<1
Acetone, ug/L	<10	<10	<10	<10	<10
Acrolein, ug/L	<10	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1	<1
Benzene, ug/L	<1	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1	<1

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02-127-1	4918	07 FEB 89
02-127-2	4918 A	07 FEB 89
02-127-3	4918 B	07 FEB 89
02-127-4	4927	07 FEB 89
02-127-5	4928 A	07 FEB 89

PARAMETER	02-127-1	02-127-2	02-127-3	02-127-4	02-127-5
Carbon Tetrachloride, ug/L	<1	<1	<1	<1	<1
Chloroethane, ug/L	<1	<1	<1	<1	<1
Bromoform, ug/L	<1	<1	<1	<1	<1
Chloroform, ug/L	<1	<1	<1	<1	<1
Chloromethane, ug/L	<1	<1	<1	<1	<1
Carbon Disulfide, ug/L	<1	<1	<1	<1	<1
Dibromochloromethane, ug/L	<1	<1	<1	<1	<1
Ethylbenzene, ug/L	<1	<1	<1	<1	<1
Freon 113, ug/L	<1	<1	<1	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1	<1	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10	<10	<10	<10
Methylene Chloride, ug/L	<1	<1	<1	<1	<1
Tetrachloroethylene, ug/L	4	15	4	<1	2
Styrene, ug/L	<1	<1	<1	<1	<1
Trichloroethylene, ug/L	130	95	52	2	<1
Trichlorofluoromethane, ug/L	<1	<1	<1	<1	<1
Toluene, ug/L	<1	<1	<1	<1	<1
Vinyl Acetate, ug/L	<10	<10	<10	<10	<10
Vinyl Chloride, ug/L	<1	<1	<1	<1	<1
Total Xylene Isomers, ug/L	<10	<10	<10	<10	<10
trans-1,2-Dichloroethylene, ug/L	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
Chemical Oxygen Demand, mg/L	<5	8
Oil and Grease, mg/L	<5	<5
Fluoride, mg/L	0.4	0.3
Total Organic Halides (TOX), mg/L	0.24	0.23
Aluminum, mg/L	<0.2	<0.2
Boron, mg/L	<0.02	0.06
Silicon, mg/L	12	13
Antimony, mg/L	35	41
Arsenic, mg/L	<0.002	<0.002
Barium, mg/L	0.098	0.076
Beryllium, mg/L	<0.001	<0.001
Cadmium, mg/L	<0.001	<0.001
Chromium, mg/L	<0.008	<0.008
Cobalt, mg/L	<0.04	<0.04
Lead, mg/L	0.003	0.003
Mercury, mg/L	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004
Silver, mg/L	<0.01	<0.01
Thallium, mg/L	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03

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02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
B/N,A Ext.Pri.Poll. (EPA-625)		
Date Extracted	02/13/89	02/13/89
Date Analyzed	02/22/89	02/22/89
Dilution Factor, Times 1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10
2-Chloronaphthalene, ug/L	<10	<10
2-Methylnaphthalene, ug/L	<10	<10
2-Methyl Phenol, ug/L	<10	<10
2-Nitrophenol, ug/L	<10	<10
2-Nitroaniline, ug/L	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10
2-Chlorophenol, ug/L	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50
3,3'-Dichlorobenzidine, ug/L	<10	<10
3-Nitroaniline, ug/L	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
4-Chloro-3-methylphenol, ug/L	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10
4-Chloroaniline, ug/L	<20	<20
4-Methyl Phenol, ug/L	<10	<10
4-Nitrophenol, ug/L	<25	<25
4-Nitroaniline, ug/L	<50	<50
Acenaphthene, ug/L	<10	<10
Acenaphthylene, ug/L	<10	<10
Aniline, ug/L	<20	<20
Anthracene, ug/L	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10
Benzidine, ug/L	<40	<40
Benzoic Acid, ug/L	<50	<50
Benzyl Alcohol, ug/L	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10
Benzo(a)anthracene, ug/L	<10	<10
Benzo(a)pyrene, ug/L	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10
Butylbenzylphthalate, ug/L	<10	<10
Chrysene, ug/L	<10	<10
Di-n-octylphthalate, ug/L	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10

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02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
Dibutylphthalate, ug/L	<50	<50
Diethylphthalate, ug/L	<10	<10
Dimethylphthalate, ug/L	<25	<25
Dibenzofuran, ug/L	<10	<10
Fluorene, ug/L	<10	<10
Fluoranthene, ug/L	<10	<10
Hexachlorobenzene, ug/L	<10	<10
Hexachlorobutadiene, ug/L	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10
Hexachloroethane, ug/L	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10
Isophorone, ug/L	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10
Naphthalene, ug/L	<10	<10
Nitrobenzene, ug/L	<10	<10
Pentachlorophenol, ug/L	<10	<10
Phenanthrene, ug/L	<10	<10
Phenol, ug/L	<10	<10
Pyrene, ug/L	<10	<10

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
Vol.Pri.Poll. (EPA-624)		
Date Analyzed	02/16/89	02/16/89
Dilution Factor, Times 1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	3	<1
1,1-Dichloroethylene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<10	<10
Acetone, ug/L	<10	<10
Acrolein, ug/L	<10	<10
Acrylonitrile, ug/L	<1	<1
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Bromoform, ug/L	<1	<1

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ANALYTICAL REPO

LOG NO: P89-02-127

Received: 07 FEB 89
Reported: 23 FEB 89

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-127-6	4928 B	07 FEB 89
02-127-7	4928 C	07 FEB 89

PARAMETER	02-127-6	02-127-7
Chloroform, ug/L	<1	<1
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<1	<1
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10
Methylene Chloride, ug/L	<1	<1
Tetrachloroethylene, ug/L	5	2
Styrene, ug/L	<1	<1
Trichloroethylene, ug/L	1	5
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Vinyl Acetate, ug/L	<10	<10
Vinyl Chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<10	<10
trans-1,2-Dichloroethylene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1

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LOG NO: P89-02-127

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-1
Sample Description: 4918

General Mineral Analysi
Sampled Date 07 FEB 8

Anions	mg/L	meq/L
Nitrate (as NO3)	84	1.4
Chloride	31	0.87
Sulfate	61	1.3
Bicarbonate (as HCO3)	330	5.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		9.0

Cations	mg/L	meq/L
Sodium	29	1.3
Potassium	4.5	0.12
Calcium (EDTA Titration)	110	5.5
Magnesium	24	2
Total Milliequivalents per Liter		8.9

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarbonate Alk (as CaCO3	27
Ca Hardness (as CaCO3)	27
Mg Hardness (as CaCO3)	9
Total Hardness (as CaCO3)	36
Iron	0.6
Manganese	<0.0(
Copper	<0.(
Zinc	0.1
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	5(
Sp. Conductance, umhos/cm	8!
pH, units	7

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ANALYTICAL REPORT

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-2
Sample Description: 4918 A

General Mineral Analysis
Sampled Date 07 FEB 89

Anions	mg/L	meq/L
Nitrate (as NO3)	21	0.34
Chloride	16	0.45
Sulfate	62	1.3
Bicarbonate (as HCO3)	230	3.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		5.9

Cations	mg/L	meq/L
Sodium	26	1.1
Potassium	3.7	0.095
Calcium (EDTA Titration)	68	3.4
Magnesium	16	1.3
Total Milliequivalents per Liter		5.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	190
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	66
Total Hardness (as CaCO3)	236
Iron	0.84
Manganese	0.012
Copper	<0.02
Zinc	0.20
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	340
Sp. Conductance, umhos/cm	580
pH, units	7.6

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ANALYTICAL REPO

LOG NO: P89-02-127

Received: 07 FEB 89
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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-3
Sample Description: 4918 B

General Mineral Analysi
Sampled Date 07 FEB 8

Anions	mg/L	meq/L
Nitrate (as N03)	92	1.5
Chloride	35	0.99
Sulfate	59	1.2
Bicarbonate (as HC03)	350	5.8
Carbonate (as C03)	<0.6	<0.02
Total Milliequivalents per Liter		9.5

Cations	mg/L	meq/L
Sodium	33	1.4
Potassium	5.4	0.14
Calcium (EDTA Titration)	120	6
Magnesium	29	2.4
Total Milliequivalents per Liter		9.9

Determination	mg/
Hydroxide Alk (as CaC03)	<
Carbonate Alk (as CaC03)	<
Bicarbonate Alk (as CaC03	29
Ca Hardness (as CaC03)	30
Mg Hardness (as CaC03)	12
Total Hardness (as CaC03)	42
Iron	0.1
Manganese	<0.00
Copper	<0.0
Zinc	0.2
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	54
Sp. Conductance, umhos/cm	90
pH, units	7.

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ANALYTICAL REPOR

LOG NO: P89-02-127

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-4
Sample Description: 4927

General Mineral Analysis
Sampled Date 07 FEB 89

Anions	mg/L	meq/L
Nitrate (as NO3)	19	0.31
Chloride	21	0.59
Sulfate	65	1.4
Bicarbonate (as HCO3)	270	4.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.7

Cations	mg/L	meq/L
Sodium	25	1.1
Potassium	3.4	0.087
Calcium (EDTA Titration)	78	3.9
Magnesium	15	1.2
Total Milliequivalents per Liter		6.3

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	220
Ca Hardness (as CaCO3)	190
Mg Hardness (as CaCO3)	62
Total Hardness (as CaCO3)	252
Iron	4.0
Manganese	0.029
Copper	<0.02
Zinc	1.9
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	380
Sp. Conductance, umhos/cm	650
pH, units	7.4

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LOG NO: P89-02-127

Received: 07 FEB 89
Reported: 23 FEB 89

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-5
Sample Description: 4928 A

General Mineral Analysis
Sampled Date 07 FEB 89

Anions	mg/L	meq/L
Nitrate (as NO3)	16	0.26
Chloride	21	0.59
Sulfate	51	1.1
Bicarbonate (as HCO3)	350	5.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.8

Cations	mg/L	meq/L
Sodium	35	1.5
Potassium	4.5	0.12
Calcium (EDTA Titration)	92	4.6
Magnesium	21	1.7
Total Milliequivalents per Liter		7.9

Determination	mg/l
Hydroxide Alk (as CaCO3)	<:
Carbonate Alk (as CaCO3)	<:
Bicarbonate Alk (as CaCO3	29(
Ca Hardness (as CaCO3)	23(
Mg Hardness (as CaCO3)	8(
Total Hardness (as CaCO3)	31(
Iron	0.9:
Manganese	0.08:
Copper	<0.0:
Zinc	0.5:
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	44(
Sp. Conductance, umhos/cm	72(
pH, units	7.

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ANALYTICAL REPORT

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-6
Sample Description: 4928 B

General Mineral Analysis
Sampled Date 07 FEB 89

Anions	mg/L	meq/L
Nitrate (as NO3)	3.9	0.063
Chloride	17	0.48
Sulfate	56	1.2
Bicarbonate (as HCO3)	350	5.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.6

Cations	mg/L	meq/L
Sodium	36	1.6
Potassium	4.6	0.12
Calcium (EDTA Titration)	85	4.2
Magnesium	24	2
Total Milliequivalents per Liter		7.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	290
Ca Hardness (as CaCO3)	210
Mg Hardness (as CaCO3)	99
Total Hardness (as CaCO3)	309
Iron	2.2
Manganese	0.92
Copper	<0.02
Zinc	0.36
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	400
Sp. Conductance, umhos/cm	680
pH, units	7.3

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 89-02-127-7
Sample Description: 4928 C

General Mineral Analysi
Sampled Date 07 FEB 8

Anions	mg/L	meq/L
Nitrate (as NO3)	22	0.35
Chloride	21	0.59
Sulfate	65	1.4
Bicarbonate (as HCO3)	240	4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.4

Cations	mg/L	meq/L
Sodium	26	1.1
Potassium	3.5	0.089
Calcium (EDTA Titration)	82	4.1
Magnesium	16	1.3
Total Milliequivalents per Liter		6.6

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarbonate Alk (as CaCO3	20
Ca Hardness (as CaCO3)	20
Mg Hardness (as CaCO3)	6
Total Hardness (as CaCO3)	26
Iron	0.8
Manganese	<0.00
Copper	<0.0
Zinc	0.1
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	39
Sp. Conductance, umhos/cm	62
pH, units	7.

* Conforms to Title 22, California Administrative Code

Linda Black for JAE
Jeffrey A. Erion, Laboratory Manager

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ANALYTICAL REPOR

FAX: (818) 795-857

LOG NO: P88-11-124

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Chemical Oxygen Demand, mg/L	<3	13	10	<3	<3
Oil and Grease, mg/L	<5	20	<5	<5	<5
Fluoride, mg/L	0.3	0.2	0.3	0.2	0.2
Total Organic Halides (TOX), mg/L	0.10	<0.08	0.12	<0.08	<0.08
Aluminum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Boron, mg/L	0.17	0.16	0.17	0.19	0.22
Antimony, mg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Barium, mg/L	0.10	0.043	0.10	0.079	0.11
Beryllium, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium, mg/L	<0.001	0.0054	0.0002	<0.001	<0.001
Chromium, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Silver, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

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FAX: (818) 795-857

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
B/N,A Ext.Pri.Poll. (EPA-625)					
Date Extracted	11/11/88	11/11/88	11/11/88	11/11/88	11/11/88
Date Analyzed	11/17/88	11/17/88	11/17/88	11/17/88	11/17/88
Dilution Factor, Times 1	1	1	1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methylnaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
2-Nitrophenol, ug/L	<10	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10	<10

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ANALYTICAL REPORT

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
2-Chlorophenol, ug/L	<10	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50	<50	<50	<50
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10	<10
3-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20	<20
4-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
4-Nitrophenol, ug/L	<25	<25	<25	<25	<25
4-Nitroaniline, ug/L	<50	<50	<50	<50	<50
Acenaphthene, ug/L	<10	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40	<40
Benzoic Acid, ug/L	<50	<50	<50	<50	<50
Benzyl Alcohol, ug/L	<20	<20	<20	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10	<10	<10	<10

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10	<10
Benzo(a)anthracene, ug/L	<10	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10	<10
Butylbenzylphthalate, ug/L	<10	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10	<10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25	<25
Dibenzofuran, ug/L	<10	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10	<10
Fluoranthene, ug/L	<10	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10	<10	<10	<10

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LOG NO: P88-11-124

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Isophorone, ug/L	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10	<10
Nitrobenzene, ug/L	<10	<10	<10	<10	<10
Pentachlorophenol, ug/L	<10	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10	<10
Pyrene, ug/L	<10	<10	<10	<10	<10

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11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Vol.Pri.Poll. (EPA-624)					
Date Analyzed	11/12/88	11/12/88	11/11/88	11/12/88	11/12/88
Dilution Factor, Times 1	1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1	1
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1	<1
2-Hexanone, ug/L	<1	<1	<1	<1	<1
Acetone, ug/L	<10	60	<10	<10	<10
Acrolein, ug/L	<10	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1	<1

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11-124-1	4918	08 NOV 88
11-124-2	4918A	08 NOV 88
11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Benzene, ug/L	<1	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1	<1
Carbon Tetrachloride, ug/L	<1	<1	<1	<1	<1
Chloroethane, ug/L	<1	<1	<1	<1	<1
Bromoform, ug/L	<1	<1	<1	<1	<1
Chloroform, ug/L	1	<1	<1	<1	<1
Chloromethane, ug/L	<1	<1	<1	<1	<1
Carbon Disulfide, ug/L	<1	<1	<1	<1	<1
Dibromochloromethane, ug/L	<1	<1	<1	<1	<1
Ethylbenzene, ug/L	<1	<1	<1	<1	<1
Freon 113, ug/L	<1	<1	<1	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1	<1	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10	<10	<10	<10
Methylene Chloride, ug/L	<1	<1	<1	<1	<1
Tetrachloroethylene, ug/L	4	6	5	<1	<1
Styrene, ug/L	<1	<1	<1	<1	<1
Trichloroethylene, ug/L	61	2	38	2	<1
Trichlorofluoromethane, ug/L	<1	<1	<1	<1	<1
Toluene, ug/L	<1	<1	<1	<1	<1
Vinyl Acetate, ug/L	<10	<10	<10	<10	<10
Vinyl Chloride, ug/L	<1	<1	<1	<1	<1

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11-124-3	4918B	08 NOV 88
11-124-4	4927	08 NOV 88
11-124-5	4928A	08 NOV 88

PARAMETER	11-124-1	11-124-2	11-124-3	11-124-4	11-124-5
Total Xylene Isomers, ug/L	<10	<10	<10	<10	<10
trans-1,2-Dichloroethylene, ug/L	<1	3	1	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Chemical Oxygen Demand, mg/L	<3	<3
Oil and Grease, mg/L	5	9
Fluoride, mg/L	0.3	0.2
Total Organic Halides (TOX), mg/L	<0.08	0.13
Aluminum, mg/L	<0.2	<0.2
Boron, mg/L	0.16	0.20
Antimony, mg/L	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002
Barium, mg/L	0.099	0.077
Beryllium, mg/L	<0.001	<0.001
Cadmium, mg/L	<0.001	<0.001
Chromium, mg/L	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04
Lead, mg/L	<0.002	<0.002
Mercury, mg/L	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004
Silver, mg/L	<0.02	<0.02
Thallium, mg/L	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
B/N,A Ext.Pri.Poll. (EPA-625)		
Date Extracted	11/11/88	11/11/88
Date Analyzed	11/17/88	11/17/88
Dilution Factor, Times 1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10
2-Chloronaphthalene, ug/L	<10	<10
2-Methylnaphthalene, ug/L	<10	<10
2-Methyl Phenol, ug/L	<10	<10
2-Nitrophenol, ug/L	<10	<10
2-Nitroaniline, ug/L	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10
2-Chlorophenol, ug/L	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50
3,3'-Dichlorobenzidine, ug/L	<10	<10

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11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
3-Nitroaniline, ug/L	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10
4-Chloroaniline, ug/L	<20	<20
4-Methyl Phenol, ug/L	<10	<10
4-Nitrophenol, ug/L	<25	<25
4-Nitroaniline, ug/L	<50	<50
Acenaphthene, ug/L	<10	<10
Acenaphthylene, ug/L	<10	<10
Aniline, ug/L	<20	<20
Anthracene, ug/L	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10
Benzidine, ug/L	<40	<40
Benzoic Acid, ug/L	<50	<50
Benzyl Alcohol, ug/L	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10
Benzo(a)anthracene, ug/L	<10	<10
Benzo(a)pyrene, ug/L	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10

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11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Butylbenzylphthalate, ug/L	<10	<10
Chrysene, ug/L	<10	<10
Di-n-octylphthalate, ug/L	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10
Dibutylphthalate, ug/L	<50	<50
Diethylphthalate, ug/L	<10	<10
Dimethylphthalate, ug/L	<25	<25
Dibenzofuran, ug/L	<10	<10
Fluorene, ug/L	<10	<10
Fluoranthene, ug/L	<10	<10
Hexachlorobenzene, ug/L	<10	<10
Hexachlorobutadiene, ug/L	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10
Hexachloroethane, ug/L	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10
Isophorone, ug/L	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10
Naphthalene, ug/L	<10	<10
Nitrobenzene, ug/L	<10	<10
Pentachlorophenol, ug/L	<10	<10
Phenanthrene, ug/L	<10	<10
Phenol, ug/L	<10	<10

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Pyrene, ug/L	<10	<10

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11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Butylbenzylphthalate, ug/L	<10	<10
Chrysene, ug/L	<10	<10
Di-n-octylphthalate, ug/L	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10
Dibutylphthalate, ug/L	<50	<50
Diethylphthalate, ug/L	<10	<10
Dimethylphthalate, ug/L	<25	<25
Dibenzofuran, ug/L	<10	<10
Fluorene, ug/L	<10	<10
Fluoranthene, ug/L	<10	<10
Hexachlorobenzene, ug/L	<10	<10
Hexachlorobutadiene, ug/L	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10
Hexachloroethane, ug/L	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10
Isophorone, ug/L	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10
Naphthalene, ug/L	<10	<10
Nitrobenzene, ug/L	<10	<10
Pentachlorophenol, ug/L	<10	<10
Phenanthrene, ug/L	<10	<10
Phenol, ug/L	<10	<10

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-124-6	4928B	08 NOV 88
11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Vol.Pri.Poll. (EPA-624)		
Date Analyzed	11/12/88	11/12/88
Dilution Factor, Times 1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	2	<1
1,1-Dichloroethylene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<1	<1
Acetone, ug/L	<10	<10
Acrolein, ug/L	<10	<10
Acrylonitrile, ug/L	<10	<10
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1

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11-124-7	4928C	08 NOV 88

PARAMETER	11-124-6	11-124-7
Chloroethane, ug/L	<1	<1
Bromoform, ug/L	<1	<1
Chloroform, ug/L	<1	<1
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<1	<1
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10
Methylene Chloride, ug/L	<1	<1
Tetrachloroethylene, ug/L	4	<1
Styrene, ug/L	<1	<1
Trichloroethylene, ug/L	<1	8
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Vinyl Acetate, ug/L	<10	<10
Vinyl Chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<10	<10
trans-1,2-Dichloroethylene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1

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LOG NO: P88-11-124

Received: 08 NOV 88
Reported: 29 NOV 88

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3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-1
Sample Description: 4918

General Mineral Analysis
Sampled Date 08 NOV 88

Anions	mg/L	meq/L
Nitrate (as NO3)	77	1.2
Chloride	34	0.96
Sulfate	55	1.1
Bicarbonate (as HCO3)	365	5.98
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		9.3

Cations	mg/L	meq/L
Sodium	35	1.5
Potassium	5.3	0.14
Calcium (EDTA Titration)	120	6
Magnesium	31	2.6
Total Milliequivalents per Liter		10.2

Determination	mg/L
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarbonate Alk (as CaCO3	29
Ca Hardness (as CaCO3)	30
Mg Hardness (as CaCO3)	13
Total Hardness (as CaCO3)	43
Iron	<0.0
Manganese	<0.00
Copper	<0.0
Zinc	0.2
Surfactants (MBAS)	0.
Filterable Residue (TDS)	55
Sp. Conductance, umhos/cm	90
pH, units	7.

* Conforms to Title 22, California Administrative Code

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BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

373 SOUTH FAIR OAKS AVENUE, PASADENA, CA 91105
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FAX: (818) 795-857

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-2
Sample Description: 4918A

General Mineral Analysis
Sampled Date 08 NOV 88

Anions	mg/L	meq/L
Nitrate (as NO3)	45	0.73
Chloride	35	0.99
Sulfate	57	1.2
Bicarbonate (as HCO3)	570	9.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		12.3

Cations	mg/L	meq/L
Sodium	47	2
Potassium	6.5	0.17
Calcium (EDTA Titration)	160	8
Magnesium	42	3.5
Total Milliequivalents per Liter		13.7

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	470
Ca Hardness (as CaCO3)	400
Mg Hardness (as CaCO3)	170
Total Hardness (as CaCO3)	570
Iron	0.02
Manganese	<0.005
Copper	<0.02
Zinc	<0.03
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	680
Sp. Conductance, umhos/cm	1100
pH, units	7.2

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-3
Sample Description: 4918B

General Mineral Analysis
Sampled Date 08 NOV 88

Anions	mg/L	meq/L
Nitrate (as NO3)	84	1.4
Chloride	35	0.99
Sulfate	57	1.2
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		9.6
Cations	**mg/L**	**meq/L**
Sodium	34	1.5
Potassium	5.4	0.14
Calcium (EDTA Titration)	120	6
Magnesium	32	2.6
Total Milliequivalents per Liter		10.2

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	300
Ca Hardness (as CaCO3)	300
Mg Hardness (as CaCO3)	130
Total Hardness (as CaCO3)	430
Iron	0.22
Manganese	<0.005
Copper	<0.02
Zinc	0.25
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	550
Sp. Conductance, umhos/cm	920
pH, units	7.6

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-4
Sample Description: 4927

General Mineral Analysis
Sampled Date 08 NOV 88

Anions	mg/L	meq/L
Nitrate (as NO3)	17	0.27
Chloride	20	0.56
Sulfate	64	1.3
Bicarbonate (as HCO3)	270	4.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.6

Cations	mg/L	meq/L
Sodium	34	1.5
Potassium	5.2	0.13
Calcium (EDTA Titration)	72	3.6
Magnesium	21	1.7
Total Milliequivalents per Liter		6.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	220
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	86
Total Hardness (as CaCO3)	266
Iron	<0.02
Manganese	<0.005
Copper	<0.02
Zinc	0.13
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	390
Sp. Conductance, umhos/cm	640
pH, units	7.2

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-5
Sample Description: 4928A

General Mineral Analysi
Sampled Date 08 NOV 8

Anions	mg/L	meq/L
Nitrate (as NO3)	12	0.19
Chloride	23	0.65
Sulfate	56	1.2
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		8.1

Cations	mg/L	meq/L
Sodium	49	2.1
Potassium	5.6	0.14
Calcium (EDTA Titration)	91	4.5
Magnesium	26	2.1
Total Milliequivalents per Liter		8.8

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarbonate Alk (as CaCO3	30
Ca Hardness (as CaCO3)	23
Mg Hardness (as CaCO3)	11
Total Hardness (as CaCO3)	34
Iron	<0.0
Manganese	0.01
Copper	<0.0
Zinc	0.2
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	45
Sp. Conductance, umhos/cm	76
pH, units	7.

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FAX: (818) 795-857

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-6
Sample Description: 4928B

General Mineral Analysi
Sampled Date 08 NOV 8

Anions	mg/L	meq/L
Nitrate (as NO3)	3.2	0.052
Chloride	18	0.51
Sulfate	53	1.1
Bicarbonate (as HCO3)	380	6.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.9
Cations	**mg/L**	**meq/L**
Sodium	51	2.2
Potassium	4.7	0.12
Calcium (EDTA Titration)	83	4.1
Magnesium	25	2.1
Total Milliequivalents per Liter		8.5

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarbonate Alk (as CaCO3	31
Ca Hardness (as CaCO3)	21
Mg Hardness (as CaCO3)	10
Total Hardness (as CaCO3)	31
Iron	0.0
Manganese	1.
Copper	<0.0
Zinc	0.0
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	43
Sp. Conductance, umhos/cm	74
pH, units	7.

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FAX: (818) 795-857

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-11-124-7
Sample Description: 4928C

General Mineral Analysis
Sampled Date 08 NOV 88

Anions	mg/L	meq/L
Nitrate (as NO3)	19	0.31
Chloride	20	0.56
Sulfate	61	1.3
Bicarbonate (as HCO3)	260	4.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.4

Cations	mg/L	meq/L
Sodium	33	1.4
Potassium	4.4	0.11
Calcium (EDTA Titration)	76	3.8
Magnesium	21	1.7
Total Milliequivalents per Liter		7.0

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarbonate Alk (as CaCO3	210
Ca Hardness (as CaCO3)	190
Mg Hardness (as CaCO3)	86
Total Hardness (as CaCO3)	276
Iron	<0.02
Manganese	<0.005
Copper	<0.02
Zinc	<0.03
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	380
Sp. Conductance, umhos/cm	630
pH, units	7.4

* Conforms to Title 22, California Administrative Code

Jeffrey A. Erion, Laboratory Manager

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373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: B88-07-590

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Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Nitrate (as NO3), mg/L	81	54	82	15	19
Phenolics, mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chemical Oxygen Demand, mg/L	16	8	<3	<3	10
Color, APHA U	4	<3	4	4	7
Odor, TON 40 C	<1	2	<1	<1	<1
Turbidity, NTU	10	0.60	0.63	0.81	0.17
Oil and Grease, mg/L	<5	<5	<5	<5	11
Fluoride, mg/L	0.4	0.3	0.4	0.3	0.3
Total Organic Halides (TOX), mg/L	0.12	<0.08	<0.08	<0.08	<0.08
Aluminum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Antimony, mg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Barium, mg/L	0.094	0.057	0.090	0.071	0.13
Beryllium, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Boron, mg/L	0.19	0.18	0.17	0.19	0.34
Cadmium, mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004	<0.004	<0.004	<0.004

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ANALYTICAL REPORT

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LOG NO: P88-07-590

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Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
B/N,A Ext.Pri.Poll. (EPA-625)					
Date Extracted	07/29/88	07/29/88	07/29/88	07/29/88	08/01/88
Date Analyzed	08/04/88	08/04/88	08/04/88	08/04/88	08/04/88
Dilution Factor, Times 1	1	1	1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methylnaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
2-Nitrophenol, ug/L	<10	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2-Chlorophenol, ug/L	<10	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50	<50	<50	<50

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10	<10
3-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20	<20
4-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
4-Nitrophenol, ug/L	<25	<25	<25	<25	<25
4-Nitroaniline, ug/L	<50	<50	<50	<50	<50
Acenaphthene, ug/L	<10	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40	<40
Benzoic Acid, ug/L	<50	<50	<50	<50	<50
Benzyl Alcohol, ug/L	<20	<20	<20	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10	<10	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10	<10
Benzo(a)anthracene, ug/L	<10	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10	<10

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07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10	<10
Butylbenzylphthalate, ug/L	<10	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10	<10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25	<25
Dibenzofuran, ug/L	<10	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10	<10
Fluoranthene, ug/L	<10	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10	<10	<10	<10
Isophorone, ug/L	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10	<10
Nitrobenzene, ug/L	<10	<10	<10	<10	<10

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Pentachlorophenol, ug/L	<10	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10	<10
Pyrene, ug/L	<10	<10	<10	<10	<10
Semi-Quantified Results **					
Chlorobenzene, ug/L	---	---	---	---	10

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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ANALYTICAL REPORT

LOG NO: PS8-07-590

Received: 28 JUL 88
Reported: 18 AUG 88

Alice Campbell
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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Vol.Pri.Poll. (EPA-624)					
Date Analyzed	08/04/88	08/04/88	08/04/88	08/04/88	08/04/88
Dilution Factor, Times 1	1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1	1
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1	<1
2-Hexanone, ug/L	<1	<1	<1	<1	<1
Acetone, ug/L	<10	<10	<10	<10	<10
Acrolein, ug/L	<10	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1	<1
Benzene, ug/L	<1	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1	<1

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REPORT OF ANALYTICAL RESULTS

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07-590-1	4918	28 JUL 88
07-590-2	4918A	28 JUL 88
07-590-3	4918B	28 JUL 88
07-590-4	4927	28 JUL 88
07-590-5	4928A	28 JUL 88

PARAMETER	07-590-1	07-590-2	07-590-3	07-590-4	07-590-5
Carbon Tetrachloride, ug/L	<1	<1	<1	<1	<1
Chloroethane, ug/L	<1	<1	<1	<1	<1
Bromoform, ug/L	<1	<1	<1	<1	<1
Chloroform, ug/L	1	<1	1	<1	<1
Chloromethane, ug/L	<1	<1	<1	<1	<1
Carbon Disulfide, ug/L	<1	<1	<1	<1	<1
Dibromochloromethane, ug/L	<1	<1	<1	<1	<1
Ethylbenzene, ug/L	<1	<1	<1	<1	<1
Freon 113, ug/L	<1	<1	<1	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1	<1	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10	<10	<10	<10
Methylene Chloride, ug/L	<1	<1	<1	<1	<1
Tetrachloroethylene, ug/L	2	11	5	<1	1
Styrene, ug/L	<1	<1	<1	<1	<1
Trichloroethylene, ug/L	73	2	35	<1	<1
Trichlorofluoromethane, ug/L	<1	<1	<1	<1	<1
Toluene, ug/L	<1	<1	<1	<1	<1
Vinyl Acetate, ug/L	<10	<10	<10	<10	<10
Vinyl Chloride, ug/L	<1	<1	<1	<1	<1
Total Xylene Isomers, ug/L	<10	<10	<10	<10	<1
trans-1,2-Dichloroethylene, ug/L	<1	2	<1	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
Nitrate (as NO3), mg/L	2.4	19
Phenolics, mg/L	<0.05	<0.05
Chemical Oxygen Demand, mg/L	6	<3
Color, APHA U	8	<3
Odor, TON 40 C	1	<1
Turbidity, NTU	1.2	0.63
Oil and Grease, mg/L	11	12
Fluoride, mg/L	0.4	0.3
Total Organic Halides (TOX), mg/L	<0.08	<0.08
Aluminum, mg/L	<0.2	<0.2
Antimony, mg/L	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002
Barium, mg/L	0.11	0.071
Beryllium, mg/L	<0.001	<0.001
Boron, mg/L	0.19	0.16
Cadmium, mg/L	<0.001	<0.001
Chromium, mg/L	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04
Lead, mg/L	<0.002	<0.002
Mercury, mg/L	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004
Thallium, mg/L	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
B/N,A Ext.Pri.Poll. (EPA-625)		
Date Extracted	08/01/88	08/01/88
Date Analyzed	08/04/88	08/04/88
Dilution Factor, Times 1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10
2-Chloronaphthalene, ug/L	<10	<10
2-Methylnaphthalene, ug/L	<10	<10
2-Methyl Phenol, ug/L	<10	<10
2-Nitrophenol, ug/L	<10	<10
2-Nitroaniline, ug/L	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10
2-Chlorophenol, ug/L	<10	<10
2-Methyl-4,6-dinitrophenol, ug/L	<50	<50
3,3'-Dichlorobenzidine, ug/L	<10	<10
3-Nitroaniline, ug/L	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10

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Reported: 18 AUG 88

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
4-Chloro-3-methylphenol, ug/L	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10
4-Chloroaniline, ug/L	<20	<20
4-Methyl Phenol, ug/L	<10	<10
4-Nitrophenol, ug/L	<25	<25
4-Nitroaniline, ug/L	<50	<50
Acenaphthene, ug/L	<10	<10
Acenaphthylene, ug/L	<10	<10
Aniline, ug/L	<20	<20
Anthracene, ug/L	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10
Benzidine, ug/L	<40	<40
Benzoic Acid, ug/L	<50	<50
Benzyl Alcohol, ug/L	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10
Benzo(a)anthracene, ug/L	<10	<10
Benzo(a)pyrene, ug/L	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10
Butylbenzylphthalate, ug/L	<10	<10
Chrysene, ug/L	<10	<10
Di-n-octylphthalate, ug/L	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
Dibutylphthalate, ug/L	<50	<50
Diethylphthalate, ug/L	<10	<10
Dimethylphthalate, ug/L	<25	<25
Dibenzofuran, ug/L	<10	<10
Fluorene, ug/L	<10	<10
Fluoranthene, ug/L	<10	<10
Hexachlorobenzene, ug/L	<10	<10
Hexachlorobutadiene, ug/L	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10
Hexachloroethane, ug/L	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10
Isophorone, ug/L	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10
Naphthalene, ug/L	<10	<10
Nitrobenzene, ug/L	<10	<10
Pentachlorophenol, ug/L	<10	<10
Phenanthrene, ug/L	<10	<10
Phenol, ug/L	<10	<10
Pyrene, ug/L	<10	<10
Semi-Quantified Results **		
An Unidentified Compound, ug/L	10	---
A Nitrogenated Hydrocarbon, ug/L	20	---
An Oxygenated Hydrocarbon, ug/L	---	20

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
Vol.Pri.Poll. (EPA-624)		
Date Analyzed	08/04/88	08/04/88
Dilution Factor, Times 1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1
1,1-Dichloroethane, ug/L	2	<1
1,1-Dichloroethylene, ug/L	<1	<1
1,2-Dichloroethane, ug/L	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1
1,2-Dichloropropane, ug/L	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1
2-Hexanone, ug/L	<1	<1
Acetone, ug/L	<10	<10
Acrolein, ug/L	<10	<10
Acrylonitrile, ug/L	<10	<10
Bromodichloromethane, ug/L	<1	<1
Bromomethane, ug/L	<1	<1
Benzene, ug/L	<1	<1
Chlorobenzene, ug/L	<1	<1
Carbon Tetrachloride, ug/L	<1	<1
Chloroethane, ug/L	<1	<1
Bromoform, ug/L	<1	<1

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-590-6	4928B	28 JUL 88
07-590-7	4928C	28 JUL 88

PARAMETER	07-590-6	07-590-7
Chloroform, ug/L	<1	1
Chloromethane, ug/L	<1	<1
Carbon Disulfide, ug/L	<1	<1
Dibromochloromethane, ug/L	<1	<1
Ethylbenzene, ug/L	<1	<1
Freon 113, ug/L	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10
Methylene Chloride, ug/L	<1	<1
Tetrachloroethylene, ug/L	4	<1
Styrene, ug/L	<1	<1
Trichloroethylene, ug/L	<1	8
Trichlorofluoromethane, ug/L	<1	<1
Toluene, ug/L	<1	<1
Vinyl Acetate, ug/L	<10	<10
Vinyl Chloride, ug/L	<1	<1
Total Xylene Isomers, ug/L	<1	<10
trans-1,2-Dichloroethylene, ug/L	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-1
Sample Description: 4918

General Mineral Analysis
Sampled Date 28 JUL 88

Anions	mg/L	meq/L
Nitrate (as NO3)	81	1.3
Chloride	38	1.1
Sulfate	52	1.1
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		8.7

Cations	mg/L	meq/L
Sodium	26	1.1
Potassium	4.3	0.11
Calcium (EDTA Titration)	110	5.5
Magnesium	23	1.9
Total Milliequivalents per Liter		8.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	260
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	95
Total Hardness (as CaCO3)	365
Iron	0.06
Manganese	<0.005
Copper	<0.02
Zinc	0.38
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	540
Sp. Conductance, umhos/cm	810
pH, units	7.5

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-2
Sample Description: 4918A

General Mineral Analysi
Sampled Date 28 JUL 8

Anions	mg/L	meq/L
Nitrate (as NO3)	54	0.87
Chloride	36	1
Sulfate	53	1.1
Bicarbonate (as HCO3)	510	8.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		11.4

Cations	mg/L	meq/L
Sodium	35	1.5
Potassium	6.0	0.15
Calcium (EDTA Titration)	140	7
Magnesium	30	2.5
Total Milliequivalents per Liter		11.2

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarb Alk (as CaCO3)	42
Ca Hardness (as CaCO3)	35
Mg Hardness (as CaCO3)	12
Total Hardness (as CaCO3)	47
Iron	0.2
Manganese	0.03
Copper	<0.0
Zinc	0.1
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	66
Sp. Conductance, umhos/cm	100
pH, units	6.

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-3
Sample Description: 4918B

General Mineral Analysi
Sampled Date 28 JUL 8

Anions	mg/L	meq/L
Nitrate (as NO3)	82	1.3
Chloride	36	1
Sulfate	49	1
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		8.5

Cations	mg/L	meq/L
Sodium	25	1.1
Potassium	5.2	0.13
Calcium (EDTA Titration)	110	5.5
Magnesium	22	1.8
Total Milliequivalents per Liter		8.5

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarb Alk (as CaCO3)	26
Ca Hardness (as CaCO3)	27
Mg Hardness (as CaCO3)	9
Total Hardness (as CaCO3)	36
Iron	0.0
Manganese	<0.00
Copper	<0.0
Zinc	0.0
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	51
Sp. Conductance, umhos/cm	83
pH, units	7.

* Conforms to Title 22, California Administrative Code

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Reported: 18 AUG 88

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-4
Sample Description: 4927

General Mineral Analysi
Sampled Date 28 JUL 8

Anions	mg/L	meq/L
Nitrate (as NO3)	15	0.24
Chloride	21	0.59
Sulfate	58	1.2
Bicarbonate (as HCO3)	240	4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.1
Cations	**mg/L**	**meq/L**
Sodium	25	1.1
Potassium	4.2	0.11
Calcium (EDTA Titration)	68	3.4
Magnesium	15	1.2
Total Milliequivalents per Liter		5.8

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarb Alk (as CaCO3)	20
Ca Hardness (as CaCO3)	17
Mg Hardness (as CaCO3)	6
Total Hardness (as CaCO3)	23
Iron	<0.0
Manganese	<0.00
Copper	<0.0
Zinc	0.3
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	36
Sp. Conductance, umhos/cm	59
pH, units	7.

* Conforms to Title 22, California Administrative Code

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BROWN AND CALDWELL LABORATORIES

373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: 288-07-590

Received: 28 JUL 88
Reported: 18 AUG 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-5
Sample Description: 4928A

General Mineral Analysis
Sampled Date 28 JUL 88

Anions	mg/L	meq/L
Nitrate (as NO3)	19	0.31
Chloride	36	1
Sulfate	51	1.1
Bicarbonate (as HCO3)	442	7.24
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		9.7

Cations	mg/L	meq/L
Sodium	51	2.2
Potassium	5.6	0.14
Calcium (EDTA Titration)	99	4.9
Magnesium	24	2
Total Milliequivalents per Liter		9.2

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	362
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	99
Total Hardness (as CaCO3)	349
Iron	<0.02
Manganese	0.32
Copper	<0.02
Zinc	0.41
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	550
Sp. Conductance, umhos/cm	900
pH, units	7.4

* Conforms to Title 22, California Administrative Code

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Alice Campbell
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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-6
Sample Description: 4928B

General Mineral Analysi
Sampled Date 28 JUL 8

Anions	mg/L	meq/L
Nitrate (as NO3)	2.4	0.039
Chloride	18	0.51
Sulfate	48	1
Bicarbonate (as HCO3)	350	5.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.4

Cations	mg/L	meq/L
Sodium	30	1.3
Potassium	3.9	0.1
Calcium (EDTA Titration)	85	4.2
Magnesium	20	1.6
Total Milliequivalents per Liter		7.2

Determination	mg/
Hydroxide Alk (as CaCO3)	<
Carbonate Alk (as CaCO3)	<
Bicarb Alk (as CaCO3)	29
Ca Hardness (as CaCO3)	21
Mg Hardness (as CaCO3)	8
Total Hardness (as CaCO3)	29
Iron	<0.0
Manganese	0.9
Copper	<0.0
Zinc	0.1
Surfactants (MBAS)	<0.
Filterable Residue (TDS)	41
Sp. Conductance, umhos/cm	68
pH, units	7.

* Conforms to Title 22, California Administrative Code

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-07-590-7
Sample Description: 4928C

General Mineral Analysis
Sampled Date 28 JUL 88

Anions	mg/L	meq/L
Nitrate (as NO3)	19	0.31
Chloride	20	0.56
Sulfate	57	1.2
Bicarbonate (as HCO3)	240	4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.1

Cations	mg/L	meq/L
Sodium	25	1.1
Potassium	4.1	0.1
Calcium (EDTA Titration)	73	3.6
Magnesium	16	1.3
Total Milliequivalents per Liter		6.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	200
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	66
Total Hardness (as CaCO3)	246
Iron	<0.02
Manganese	0.008
Copper	<0.02
Zinc	0.16
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	370
Sp. Conductance, umhos/cm	590
pH, units	7.4

* Conforms to Title 22, California Administrative Code

Jeffrey A. Erion, Laboratory Manager

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ANALYTICAL REPORT

LOG NO: P88-04-661

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Alice Campbell
Lau Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Chemical Oxygen Demand, mg/L	7	11	5	8	<3
Non-filterable Residue (TSS), mg/L	<5	<5	<5	<5	<5
Oil and Grease, mg/L	5	<5	<5	<5	<5
Volatile Suspended Solids, mg/L	<5	<5	<5	<5	<5
Fluoride, mg/L	0.4	0.3	0.4	0.4	0.3
Total Organic Halides (TOX), mg/L	<0.08	0.12	0.13	0.08	<0.08
Aluminum, mg/L	0.2	<0.2	<0.2	<0.2	0.2
Boron, mg/L	0.18	0.34	0.13	0.14	0.16
Silicon, mg/L	12	13	10	11	13
Antimony, mg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Barium, mg/L	0.14	0.18	0.12	0.09	0.10
Beryllium, mg/L	0.001	<0.001	0.001	0.001	<0.001
Cadmium, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Chromium, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	0.013	0.004	0.006	0.002	0.005
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008	0.0009
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Silver, mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2	<0.2

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Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

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Alice Campbell
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Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928R	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
B/N,A Ext.Pri.Poll. (EPA-625)					
Date Extracted	05/02/88	05/02/88	05/02/88	05/02/88	05/02/88
Date Analyzed	05/15/88	05/15/88	05/15/88	05/15/88	05/15/88
Dilution Factor, Times 1	1	1	1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methylnaphthalene, ug/L	<10	<10	<10	<10	<10
2-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
2-Nitrophenol, ug/L	<10	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10	<10
2-Chlorophenol, ug/L	<10	<10	<10	<10	<10
2-Methyl-4,6-dintrophenol, ug/L	<50	<50	<50	<50	<50

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Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928E	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10	<10
3-Nitroaniline, ug/L	<50	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20	<20
4-Methyl Phenol, ug/L	<10	<10	<10	<10	<10
4-Nitrophenol, ug/L	<25	<25	<25	<25	<25
4-Nitroaniline, ug/L	<50	<50	<50	<50	<50
Acenaphthene, ug/L	<10	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40	<40
Benzoic Acid, ug/L	<50	<50	<50	<50	<50
Benzyl Alcohol, ug/L	<20	<20	<20	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10	<10	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10	<10
Benzo(a)anthracene, ug/L	<10	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10	<10

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Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	OWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10	<10
Butylbenzylphthalate, ug/L	<10	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10	<10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25	<25
Dibenzofuran, ug/L	<10	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10	<10
Fluoranthene, ug/L	<10	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10	<10	<10	<10
Isophorone, ug/L	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10	<10
Nitrobenzene, ug/L	<10	<10	<10	<10	<10

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3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 88-7430

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Pentachlorophenol, ug/L	<10	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10	<10
Pyrene, ug/L	<10	<10	<10	<10	<10

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	OWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Vol.Pri.Poll. (EPA-624)					
Date Extracted	05/06/88	05/06/88	05/06/88	05/06/88	05/06/88
Dilution Factor, Times 1	1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	2	<1	<1	<1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1	<1
2-Hexanone, ug/L	<1	<1	<1	<1	<1
Acetone, ug/L	<10	<10	<10	<10	<10
Acrolein, ug/L	<10	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1	<1
Benzene, ug/L	<1	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1	<1

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-1	Newberry 4928B	29 APR 88
04-661-2	Strathern 4928A	29 APR 88
04-661-3	Penrose 4918	29 APR 88
04-661-4	DWP 4918A	29 APR 88
04-661-5	Wrecking yard 4927	29 APR 88

PARAMETER	04-661-1	04-661-2	04-661-3	04-661-4	04-661-5
Carbon Tetrachloride, ug/l.	<1	<1	<1	<1	<1
Chloroethane, ug/l.	<1	<1	<1	<1	<1
Bromoform, ug/l.	<1	<1	<1	<1	<1
Chloroform, ug/l.	<1	<1	<1	<1	<1
Chloromethane, ug/l.	<1	<1	<1	<1	<1
Carbon Disulfide, ug/l	<1	<1	<1	<1	<1
Dibromochloromethane, ug/l.	<1	<1	<1	<1	<1
Ethylbenzene, ug/l	<1	<1	<1	<1	<1
Freon 113, ug/l.	<1	<1	<1	<1	<1
Methyl Isobutyl Ketone, ug/l	<1	<1	<1	<1	<1
Methyl Ethyl Ketone, ug/l	<10	<10	<10	<10	<10
Methylene Chloride, ug/l	<1	<1	<1	<1	<1
Tetrachloroethylene, ug/l	3	<1	2	6	<1
Styrene, ug/l	<1	<1	<1	<1	<1
Trichloroethylene, ug/l.	<1	<1	65	68	<1
Trichlorofluoromethane, ug/l.	<1	<1	<1	<1	<1
Toluene, ug/l.	<1	<1	<1	<1	<1
Vinyl Acetate, ug/l	<10	<10	<10	<10	<10
Vinyl Chloride, ug/l.	<1	<1	<1	<1	<1
Total Xylene Isomers, ug/l	<10	<10	<10	<10	<10
trans-1,2-Dichloroethylene, ug/l.	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene, ug/l.	<1	<1	<1	<1	<1

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ANALYTICAL REPORT

LOG NO: P88-04-661

Received: 29 APR 88
Reported: 18 MAY 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-6	Penrose Well #5	29 APR 88
04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
Chemical Oxygen Demand, mg/L	4	<3	4	9.6
Non-filterable Residue (TSS), mg/L	<5	<5	<5	<5
Oil and Grease, mg/L	<5	<5	<5	<5
Volatile Suspended Solids, mg/L	<5	<5	<5	<5
Fluoride, mg/L	0.5	0.3	0.4	0.3
Total Organic Halides (TOX), mg/L	<0.08	<0.08	<0.08	0.09
Aluminum, mg/L	<0.2	<0.2	<0.2	<0.2
Boron, mg/L	0.13	0.13	0.15	0.13
Silicon, mg/L	11	12	12	13
Antimony, mg/L	<0.3	<0.3	<0.3	<0.3
Arsenic, mg/L	<0.002	<0.002	<0.002	<0.002
Barium, mg/L	0.10	0.09	0.08	0.10
Beryllium, mg/L	0.001	0.001	<0.001	<0.001
Cadmium, mg/L	<0.02	<0.02	<0.02	<0.02
Chromium, mg/L	<0.04	<0.04	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	<0.002	0.002	0.005	<0.002
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.004	<0.004	<0.004	<0.004
Silver, mg/L	<0.02	<0.02	<0.02	<0.02
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-6	Penrose Well #5	29 APR 88
04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
B/N,A Ext.Pri.Poll. (EPA-625)				
Date Extracted	05/02/88	05/02/88	05/02/88	05/02/88
Date Analyzed	05/15/88	05/15/88	05/15/88	05/15/88
Dilution Factor, Times 1	1	1	1	1
1,2,4-Trichlorobenzene, ug/L	<10	<10	<10	<10
1,2-Dichlorobenzene, ug/L	<10	<10	<10	<10
1,2-Diphenylhydrazine, ug/L	<10	<10	<10	<10
1,3-Dichlorobenzene, ug/L	<10	<10	<10	<10
1,4-Dichlorobenzene, ug/L	<10	<10	<10	<10
2,4,6-Trichlorophenol, ug/L	<10	<10	<10	<10
2,4-Dichlorophenol, ug/L	<10	<10	<10	<10
2,4-Dimethylphenol, ug/L	<10	<10	<10	<10
2,4-Dinitrotoluene, ug/L	<10	<10	<10	<10
2,4-Dinitrophenol, ug/L	<25	<25	<25	<25
2,6-Dinitrotoluene, ug/L	<10	<10	<10	<10
2-Chloronaphthalene, ug/L	<10	<10	<10	<10
2-Methylnaphthalene, ug/L	<10	<10	<10	<10
2-Methyl Phenol, ug/L	<10	<10	<10	<10
2-Nitrophenol, ug/L	<10	<10	<10	<10
2-Nitroaniline, ug/L	<50	<50	<50	<50
2,4,5-Trichlorophenol, ug/L	<10	<10	<10	<10
2-Chlorophenol, ug/L	<10	<10	<10	<10
2-Methyl-4,6-dintrophenol, ug/L	<50	<50	<50	<50
3,3'-Dichlorobenzidine, ug/L	<10	<10	<10	<10

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Project: 88-7420

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
04-661-6	Penrose Well #5	29 APR 88
04-661-7	Newberry Well #3--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
3-Nitroaniline, ug/L	<50	<50	<50	<50
4-Bromophenylphenylether, ug/L	<10	<10	<10	<10
4-Chloro-3-methylphenol, ug/L	<10	<10	<10	<10
4-Chlorophenylphenylether, ug/L	<10	<10	<10	<10
4-Chloroaniline, ug/L	<20	<20	<20	<20
4-Methyl Phenol, ug/L	<10	<10	<10	<10
4-Nitrophenol, ug/L	<25	<25	<25	<25
4-Nitroaniline, ug/L	<50	<50	<50	<50
Acenaphthene, ug/L	<10	<10	<10	<10
Acenaphthylene, ug/L	<10	<10	<10	<10
Aniline, ug/L	<20	<20	<20	<20
Anthracene, ug/L	<10	<10	<10	<10
Bis(2-ethylhexyl)phthalate, ug/L	<10	<10	<10	<10
Benzidine, ug/L	<40	<40	<40	<40
Benzoic Acid, ug/L	<50	<50	<50	<50
Benzyl Alcohol, ug/L	<20	<20	<20	<20
Bis(2-chloroethyl) Ether, ug/L	<10	<10	<10	<10
Bis(2-Chloroisopropyl)ether, ug/L	<10	<10	<10	<10
Bis(2-chloroethoxy)methane, ug/L	<10	<10	<10	<10
Benzo(a)anthracene, ug/L	<10	<10	<10	<10
Benzo(a)pyrene, ug/L	<10	<10	<10	<10
Benzo(b)fluoranthene, ug/L	<10	<10	<10	<10
Benzo(g,h,i)perylene, ug/L	<10	<10	<10	<10
Benzo(k)fluoranthene, ug/L	<10	<10	<10	<10

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04-661-6	Penrose Well #5	29 APR 88
04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
Butylbenzylphthalate, ug/L	<10	<10	<10	<10
Chrysene, ug/L	<10	<10	<10	<10
Di-n-octylphthalate, ug/L	<10	<10	<10	<10
Dibenzo(a,h)anthracene, ug/L	<10	<10	<10	<10
Dibutylphthalate, ug/L	<50	<50	<50	<50
Diethylphthalate, ug/L	<10	<10	<10	<10
Dimethylphthalate, ug/L	<25	<25	<25	<25
Dibenzofuran, ug/L	<10	<10	<10	<10
Fluorene, ug/L	<10	<10	<10	<10
Fluoranthene, ug/L	<10	<10	<10	<10
Hexachlorobenzene, ug/L	<10	<10	<10	<10
Hexachlorobutadiene, ug/L	<10	<10	<10	<10
Hexachlorocyclopentadiene, ug/L	<10	<10	<10	<10
Hexachloroethane, ug/L	<10	<10	<10	<10
Indeno(1,2,3-c,d)Pyrene, ug/L	<10	<10	<10	<10
Isophorone, ug/L	<10	<10	<10	<10
N-Nitrosodi-n-propylamine, ug/L	<40	<40	<40	<40
N-Nitrosodimethylamine, ug/L	<80	<80	<80	<80
N-Nitrosodiphenylamine, ug/L	<10	<10	<10	<10
Naphthalene, ug/L	<10	<10	<10	<10
Nitrobenzene, ug/L	<10	<10	<10	<10
Pentachlorophenol, ug/L	<10	<10	<10	<10
Phenanthrene, ug/L	<10	<10	<10	<10
Phenol, ug/L	<10	<10	<10	<10

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04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
Pyrene, ug/L	<10	<10	<10	<10

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04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
Vol.Pri.Poll. (EPA-624)				
Date Extracted	05/06/88	05/06/88	05/07/88	05/07/88
Dilution Factor, Times 1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	<1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1
2-Hexanone, ug/L	<1	<1	<1	<1
Acetone, ug/L	<10	<10	<10	<10
Acrolein, ug/L	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1
Benzene, ug/L	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1
Carbon Tetrachloride, ug/L	<1	<1	<1	<1

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04-661-6	Penrose Well #5	29 APR 88
04-661-7	Newberry Well #8--batch point	29 APR 88
04-661-8	Tuxford Well #7	29 APR 88
04-661-9	Tuxford Well #6	29 APR 88

PARAMETER	04-661-6	04-661-7	04-661-8	04-661-9
Chloroethane, ug/L	<1	<1	<1	<1
Bromoform, ug/L	<1	<1	<1	<1
Chloroform, ug/L	<1	<1	<1	<1
Chloromethane, ug/L	<1	<1	<1	<1
Carbon Disulfide, ug/L	<1	<1	<1	<1
Dibromochloromethane, ug/L	<1	<1	<1	<1
Ethylbenzene, ug/L	<1	<1	<1	<1
Freon 113, ug/L	<1	<1	<1	<1
Methyl Isobutyl Ketone, ug/L	<1	<1	<1	<1
Methyl Ethyl Ketone, ug/L	<10	<10	<10	<10
Methylene Chloride, ug/L	<1	<1	<1	<1
Tetrachloroethylene, ug/L	4	<1	12	<1
Styrene, ug/L	<1	<1	<1	<1
Trichloroethylene, ug/L	28	3	26	98
Trichlorofluoromethane, ug/L	<1	<1	<1	<1
Toluene, ug/L	<1	<1	<1	7
Vinyl Acetate, ug/L	<10	<10	<10	<10
Vinyl Chloride, ug/L	<1	<1	<1	<1
Total Xylene Isomers, ug/L	<10	<10	<10	<10
trans-1,2-Dichloroethylene, ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1

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REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-1
Sample Description: Newberry 49288

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L.
Nitrate (as NO3)	2.9	0.047
Chloride	20	0.56
Sulfate	52	1.1
Bicarbonate (as HCO3)	356	5.84
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.6

Cations	mg/L	meq/L.
Sodium	31	1.3
Potassium	4.2	0.11
Calcium (EDTA Titration)	82.3	4.11
Magnesium	31	2.6
Total Milliequivalents per Liter		8.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	292
Ca Hardness (as CaCO3)	205
Mg Hardness (as CaCO3)	130
Total Hardness (as CaCO3)	335
Iron	5.7
Manganese	1.1
Copper	<0.02
Zinc	0.68
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	400
Sp. Conductance, umhos/cm	710
pH, units	7.8

* Conforms to Title 22, California Administrative Code

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-2
Sample Description: Strathern 4928A

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	23	0.37
Chloride	50	1.4
Sulfate	61	1.3
Bicarbonate (as HCO3)	480	7.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		10.9

Cations	mg/L	meq/L
Sodium	63	2.7
Potassium	6.4	0.16
Calcium (EDTA Titration)	110	5.5
Magnesium	63	5.2
Total Milliequivalents per Liter		13.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	390
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	260
Total Hardness (as CaCO3)	530
Iron	0.32
Manganese	0.40
Copper	<0.02
Zinc	0.55
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	600
Sp. Conductance, umhos/cm	1000
pH, units	7.3

* Conforms to Title 22, California Administrative Code

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Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-3
Sample Description: Penrose 4918

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	88	1.4
Chloride	35	0.99
Sulfate	57.8	1.2
Bicarbonate (as HCO3)	310	5
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		8.6

Cations	mg/L	meq/L
Sodium	27	1.2
Potassium	4.7	0.12
Calcium (EDTA Titration)	110	5.5
Magnesium	27	2.2
Total Milliequivalents per Liter		9.0

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	250
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	110
Total Hardness (as CaCO3)	380
Iron	2.1
Manganese	0.018
Copper	<0.02
Zinc	1.1
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	500
Sp. Conductance, umhos/cm	840
pH, units	7.8

* Conforms to Title 22, California Administrative Code

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Project: 88-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-4
Sample Description: DWP 4918A

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	17	0.27
Chloride	17	0.48
Sulfate	60	1.2
Bicarbonate (as HCO3)	240	4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.0

Cations	mg/L	meq/L
Sodium	25	1.1
Potassium	3.8	0.097
Calcium (EDTA Titration)	70	3.5
Magnesium	25	2.1
Total Milliequivalents per Liter		6.8

Determination	mg/L
Hydroxide Alk. (as CaCO3)	<1
Carbonate Alk. (as CaCO3)	<1
Bicarb Alk. (as CaCO3)	200
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	100
Total Hardness (as CaCO3)	270
Iron	3.6
Manganese	0.072
Copper	<0.02
Zinc	0.30
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	350
Sp. Conductance, umhos/cm	580
pH, units	7.7

* Conforms to Title 22, California Administrative Code

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REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-5
Sample Description: Wrecking yard 4927

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	15	0.24
Chloride	19.8	0.559
Sulfate	68	1.4
Bicarbonate (as HCO3)	230	3.8
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.0

Cations	mg/L	meq/L
Sodium	27	1.2
Potassium	4.2	0.11
Calcium (EDTA Titration)	69	3.4
Magnesium	27	2.2
Total Milliequivalents per Liter		6.9

Determination	mg/L
Hydroxide Alk. (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk. (as CaCO3)	190
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	110
Total Hardness (as CaCO3)	280
Iron	3.4
Manganese	0.029
Copper	<0.02
Zinc	0.65
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	361
Sp. Conductance, umhos/cm	590
pH, units	7.7

* Conforms to Title 22, California Administrative Code

004493

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BROWN AND CALDWELL LABORATORIES

373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: P88-04-661

Received: 29 APR 88
Reported: 18 MAY 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 53-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-6
Sample Description: Penrose Well #5

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	84	1.4
Chloride	35	0.99
Sulfate	54	1.1
Bicarbonate (as HCO3)	310	5
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		8.5

Cations	mg/L	meq/L
Sodium	27	1.2
Potassium	4.6	0.12
Calcium (EDTA Titration)	100	5
Magnesium	27	2.3
Total Milliequivalents per Liter		8.5

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	250
Ca Hardness (as CaCO3)	250
Mg Hardness (as CaCO3)	110
Total Hardness (as CaCO3)	360
Iron	1.6
Manganese	0.008
Copper	<0.02
Zinc	0.06
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	490
Sp. Conductance, umhos/cm	840
pH, units	7.6

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

LOG NO: P88-04-661

Received: 29 APR 88
Reported: 18 MAY 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS Page 22

Log Number : 88-04-661-7
Sample Description: Newberry Well #8--batch point

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L
Nitrate (as NO3)	18	0.29
Chloride	20	0.56
Sulfate	66	1.4
Bicarbonate (as HCO3)	240	4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.3

Cations	mg/L	meq/L
Sodium	27	1.2
Potassium	4.3	0.11
Calcium (EDTA Titration)	71	3.5
Magnesium	27	2.2
Total Milliequivalents per Liter		7.0

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	200
Ca Hardness (as CaCO3)	180
Mg Hardness (as CaCO3)	110
Total Hardness (as CaCO3)	290
Iron	0.64
Manganese	0.008
Copper	<0.02
Zinc	0.27
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	370
Sp. Conductance, umhos/cm	610
pH, units	7.6

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

LOG NO: P88-04-661

Received: 29 APR 88
Reported: 18 MAY 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-8
Sample Description: Tuxford Well #7

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L	meq/L	Determination	mg/L
Nitrate (as NO3)	26	0.42	Hydroxide Alk (as CaCO3)	<1
Chloride	20	0.56	Carbonate Alk (as CaCO3)	<1
Sulfate	70	1.5	Bicarb Alk (as CaCO3)	190
Bicarbonate (as HCO3)	230	3.8	Ca Hardness (as CaCO3)	190
Carbonate (as CO3)	<0.6	<0.02	Mg Hardness (as CaCO3)	110
			Total Hardness (as CaCO3)	300
Total Milliequivalents per Liter		6.3	Iron	0.63
			Manganese	0.011
Cations	mg/L	meq/L	Copper	<0.02
			Zinc	0.30
Sodium	26	1.1	Surfactants (MBAS)	<0.1
Potassium	4.2	0.11	Filterable Residue (TDS)	380
Calcium (EDTA Titration)	76.1	3.8	Sp. Conductance, umhos/cm	630
Magnesium	26	2.1	pH, units	7.8
Total Milliequivalents per Liter		7.1		

* Conforms to Title 22, California Administrative Code

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BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

LOG NO: P88-04-661

Received: 29 APR 88
Reported: 18 MAY 88

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-7420

REPORT OF ANALYTICAL RESULTS

Log Number : 88-04-661-9
Sample Description: Tuxford Well #6

General Mineral Analysis
Sampled Date 29 APR 88

Anions	mg/L.	meq/L.
Nitrate (as NO3)	26	0.42
Chloride	20	0.56
Sulfate	57	1.2
Bicarbonate (as HCO3)	310	5
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.2

Cations	mg/L	meq/L.
Sodium	29	1.3
Potassium	4.6	0.12
Calcium (EDTA Titration)	83	4.1
Magnesium	29	2.4
Total Milliequivalents per Liter		7.9

Determination	mg/L.
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	250
Ca Hardness (as CaCO3)	210
Mg Hardness (as CaCO3)	120
Total Hardness (as CaCO3)	330
Iron	0.80
Manganese	0.012
Copper	<0.02
Zinc	0.13
Surfactants (MBAS)	<0.1
Filterable Residue (TDS)	410
Sp. Conductance, umhos/cm	700
pH, units	7.5

* Conforms to Title 22, California Administrative Code

Jeffrey A. Erion, Laboratory Director

004497

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LAW ENVIRONMENTAL

GROUND WATER MONITORING REPORT

FOURTH QUARTER, 1987

PENROSE LANDFILL
SUN VALLEY DISTRICT
LOS ANGELES, CALIFORNIA

FOR

LOS ANGELES BY-PRODUCTS COMPANY

PROJECT NO. 58-4003-02

004308

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LAW ENVIRONMENTAL, INC.

3420 N. SAN FERNANDO BLVD.
SUITE 200
BURBANK, CALIFORNIA 91504
818-848-0214
PANAFAX 818-848-1674

February 17, 1987

Los Angeles By-Products Company
1810 East 25th Street
Los Angeles, California 90058

RWQCB File No. 58-137
Project No. 58-4003-02

Attention: Mr. Claude Van Gorden

Gentlemen:

Ground Water Monitoring Report
Fourth Quarter, 1987
Penrose Landfill
Sun Valley District
Los Angeles, California

GENERAL

This report contains the results of analyses of water samples and water level measurements obtained during the fourth quarter 1987 from the Penrose Landfill monitoring wells. This is the eighth monitoring report to be submitted for the verification monitoring program for the landfill; the first report was submitted on January 22, 1986. The purpose of the verification monitoring program is to establish whether the water quality protection standards have been exceeded at the site. The monitoring program for the landfill is described in our report entitled "Revised Ground Water Monitoring Plan, Penrose Landfill, Sun Valley District, Los Angeles, California, for the Los Angeles By-Products Company", dated August 27, 1985 (LC&A Job No. E-84003-B). The plan contained in the August 27 report was

prepared in response to Regional Water Quality Control Board (RWQCB) letters of April 4 and July 30, 1985. The plan was approved by the RWQCB in a letter dated September 25, 1985.

The monitoring well network for the landfill consists of five wells, as listed in Table 1 and shown on the attached maps.

TABLE 1

MONITORING WELLS

Well No.	Owner	Location*	Purpose
4918	LA By-Products	Adjacent to west side	Background upgradient water quality
4918A	LADWP	Adjacent to south side	Water quality passing the landfill
4927	LA By-Products	Adjacent to northeast corner	Background upgradient water quality
4928A	LA By-Products	0.4 miles east	Strathern Landfill downgradient
4928B	LA By-Products	0.4 miles east	Water quality passing the landfill

*Location in relation to landfill

The monitoring wells were sampled and water levels measured on October 21, 1987 (Wells 4918, 4927, 4928A, and 4928B) and October 29, 1987 (Well 4918A). The wells are being sampled quarterly, in accordance with the monitoring plan.

GROUND WATER LEVELS

Water level measurements obtained on October 21 and 29, 1987 are listed in Table 2. Table 2 also includes all available previous water level measurements. Table 2 follows the text of this report. A ground water contour map for October 1987 is presented on Plate 1, Ground Water Elevations. Plate 1 also shows the direction and velocity of ground water flow.

Water levels declined an average of six feet at the wells between July 1987 and October 1987. As shown on Plate 1, the direction of ground water flow is generally southward and the velocity was about 655 feet per year. The ground water velocities were calculated using the formula:

$$V = \frac{Ki}{7.48\ Sy} \times 365$$

Where: V = velocity
K = permeability in gpd/ft of aquifer
i = gradient
Sy = specific yield

and 7.48 and 365 are conversion factors to change gallons per day to feet per year. K was assumed to be 1500 gpd/ft, based on limited pump test data at a nearby well, and specific yield was estimated to be 0.30. The average gradient was determined from Plate 1.

WATER QUALITY

Results of the analyses of ground water samples for the current monitoring period and previous samplings are listed in Table 2. Complete results of the laboratory analyses for the October 21 and 29, 1987 sampling are given in the attached report by Brown and Caldwell Analytical Laboratories. Laboratory reports of previous samplings have been submitted to RWQCB. Maps showing concentrations of TCE, PCE, and DCA are presented on Plates 2, 3, and 4.

TCE and DCA content exceeded Department of Health Services action levels of 5 ppb and 1 ppb, respectively, at some of the wells during the monitoring period. TCE concentration has been steadily increasing in Well 4918 and has reached a level of 45 ppb. DCA concentration has been increasing in Well 4918A, but showed a marked decrease to 2 ppb during this monitoring period. The data suggest multiple sources of these contaminants. PCE was not found in levels above DOHS action levels.

Inorganic species concentrations remain relatively steady in all wells. Well 4918 again had an elevated nitrate content (130 ppm). The high nitrate level may be related to former dairy operations upgradient of the well. Well 4918A, which in the past has had low CO_2 and bicarbonate concentrations, seems to be

developing higher levels of these specifies, similar to the other wells. The CO_2 concentration (221 ppm) measured in the field appears to be somewhat higher than previous levels and may be questionable. Well 4928A continues to have relatively high chloride (83 ppm) and TDS (760) values. This well is not directly downgradient of Penrose or Newberry Landfills.

CONCLUSIONS AND RECOMMENDATIONS

1. Wells 4918 and 4918A consistently have elevated levels of volatile organic compounds.

2. Well 4918A appears to be more affected by landfill gas than usual. This is the only well with elevated CO_2 levels, low calcium, high iron, and moderate COD/TOC. Inorganics, including Cl and SO_4, are low, which excludes leachate as a source of contamination. Chloride is elevated, possibly because of ion exchange of sodium for calcium and magnesium after softening by precipitation of carbonate. The known problems with the gas system near the well have been corrected and this analysis shows continuing improvement in water quality.

3. The inorganic contamination levels at Well 4928A remain about the same. The change in gradient which has occurred since last quarter probably causes some drift in chemistry, because water is now moving towards the well from Newberry.

4. The overall impact of the landfill complex on water quality remains within the range of background water quality, except possibly reversible effects due to landfill gases.

5. Please note this is the final quarterly report using the long screen interval monitoring well system. In conjunction with the current SWAT program, we are installing packers in the monitoring wells which may affect future water quality results.

If you have any questions regarding this monitoring report, please contact us.

Yours very truly,

LAW ENVIRONMENTAL, INC.

by Alice Campbell

Alice Campbell, C.E.G. 1157
Hydrogeologist

by Glenn A Brown

Glenn A. Brown, C.E.G. 3
Senior Vice President

Attachments
(3 copies submitted)

cc: (3) RWQCB
Mr. Ray Delacourt

(1) LADWP
Water Quality Division

584003BREP

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TABLE 2

GROUND WATER DATABASE REV: Oct-87

		WAT LEV (ft.)			FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES (ppm)					GENERAL MINERAL(ppm)									
WELL	DATE	REF PT.	W	S	E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	POH	TOC
4928	11-Feb-83	NA									550	7.6	79	17	28.5	4.9	0.0	248	64	21.1	2.0		0.43	373		
4928	02-Apr-84	NA										8.1	86	21	30.0	5.0	0.0	270	62	28.0	0.9		0.44	407		
4918	19-Jun-85	827.1	554.7		7.0	65	720	22.5	160	760	7.3	90	25	41.0	5.2	0.0	240	60	35.0	120.0			470	<0.50	<3
4918	17-Jul-85	827.1	553.7		7.1	66	690	17.5	263	760	7.1	93	23	35.0	5.5	0.0	290	53	37.0	110.0			450	<0.50	<3
4918	14-Aug-85	827.1	552.1		6.8	68	620	5.5		760	7.7	120	20	24.0	5.1	0.0	260	47	35.0	64.0	0.3	0.38	450	<0.05	<3
4918	19-Sep-85	827.1	549.7		6.4	65	230	21.0	220	740	7.0	130	22	23.0	4.1	0.0	260	49	39.0	130.0			470	<0.05	<3
4918	16-Jan-86	827.1	543.3		7.4	64	790		235	790	7.4	150	20	26.0	4.8	0.0	260	30	55.0	120.0			470	<0.05	<3
4918	29-Apr-86	827.1	545.3		6.8	66	600	14.0	224	740	7.8	150	19	26.0	5.0	0.0	280	30	34.0	74.0			500		<3
4918	22-Jul-86	827.1	547.4		7.4	67	700	16.0	220	810	7.7	135	21	26.0	36.0	0.0	240	27	33.0	72.0			470	<0.05	<3
4918	15-Oct-86	827.1	544.9		6.2	66	700	21.0	193	800	7.9	96	23	28.0	4.3	0.0	230	57	51.0	84.0	0.2	0.40	465	<0.05	<3
4918	14-Jan-87	827.1	542.7		6.9	63	600	17.0	200	800	7.4	100	23	31.0	5.2	0.0	276	60	33.0	83.0	0.4	0.40	510	<0.05	<3
4918	15-Apr-87	827.1	541.1		5.6	63	600	9.0	200	800	7.4	100	24	28.0	5.1	<0.6	284	62	31.0	87.0	0.3	0.40	490	0.08	17.0
4918	24-Jul-87	827.1	536.7		7.6	66	700	17.5	200	820	7.3	100	26	29.0	5.3	<0.6	290	52	35.0	86.0			500	<0.05	<3
4918	21-Oct-87	827.1	530.6		7.2	64	575	23.5	230	880	7.6	110	25	29.0	5.7	<0.6	320	57	34.0	130.0	0.3	0.30	510	<0.05	<3
4918a	31-Dec-84	804.8									8.0	64	7	26.0	3.0	0.0	199	58	16.0	13.0		0.47	340	<0.05	
4918a	19-Jun-85	804.8	548.0		11.0	70	400	0.0	40	460	10.3	13	<0.01	59.0	15.0	2.3	34	47	46.0	28.0			230	0.11	23.0
4918a	17-Jul-85	804.8	545.8		8.0	70	340	0.0	50	370	9.9	10	0	53.0	13.0	0.0	26	55	44.0	12.0			220	0.50	18.0
4918a	14-Aug-85	804.8	545.4		7.7	70	320	0.0		340	9.0	12	<2.2	44.0	13.0	6.7	16	64	46.0	<0.4	0.4	0.32	200	<0.05	18.0
4918a	19-Sep-85	804.8	542.4		9.9	64	490	0.0	41	350	9.1	13	0	43.0	8.8	5.3	32	43	41.0	18.0			220	<0.05	18.0
4918a	16-Jan-86	804.8	536.7		10.4	65	310		30	310	10.4	2	0	47.0	13.0	12.0	26	24	38.0	<4.43			190	<0.05	16.0
4918a	29-Apr-86	804.8	540.0		10.5	71	340	0.0	17	370	7.5	9.1	0.32	46.0	14.0	0.0	51	25	38.0	<4			200		16.0
4918a	22-Jul-86	804.8	541.2		7.0	71	450	33.0	167	430	6.2	17.0	3.70	47.0	14.0	0.0	95	25	38.0	0.7			210	0.05	20.5
4918a	15-Oct-86	804.8	539.1		5.8	70	430	70.0	190	410	6.9	17.0	5.30	52.5	12.0	0.0	130	12	52.0	1.2	0.2	0.20	250	0.09	11.0
4918a	14-Jan-87	804.8	537.8		6.4	68	350	40.0	171	400	6.8	20.0	6.50	54.0	13.0	0.0	179	<1	36.0	<0.4	0.3	0.20	230	0.06	<3
4918a	15-Apr-87	804.8	535.9		5.5	67	500	108.0	290	520	6.2	29.0	7.60	53.0	16.0	<0.6	200	<1	36.0	0.7	0.4	0.10	310	<0.05	100.0
4918a	24-Jul-87	804.8	531.2		7.2	73	700	28.0	365	500	6.7	34.0	10.00	55.0	15.0	<0.6	230	<1	37.0	0.8			280	<0.05	26.0
4918a	29-Oct-87	804.8	524.3		6.9	67	650	221.0	330	550	6.5	43.0	12.00	52.0	18.0	<0.6	270	6	33.0	0.9			320	<0.05	26.0
4927	17-Oct-84	827.6								900	7.0	80	30	40.0	5.1	0.0	400	70	20.0	10.0			500		
4927	19-Jun-85	827.6	554.9																						
4927	17-Jul-85	827.6	553.9		6.9	66	710	50.0	400	850	6.9	110	28	39.0	6.2	0.0	480	56	43.0	8.2			550	<0.05	<3
4927	14-Aug-85	827.6	552.5		7.0	69	750	15.0		770	7.4	100	23	29.0	5.5	0.0	380	49	23.0	<0.4	0.4	0.25	460	<0.05	<3
4927	19-Sep-85	827.6	550.0		6.4	67	750	24.0	354	760	7.0	130	23	26.0	4.0	0.0	370	50	13.0	32.0			490	<0.05	<3
4927	16-Jan-86	827.6	543.6		7.2	66	700		285	700	7.2	98	19	28.0	4.9	0.0	310	31	20.0	20.0			430	<0.05	<3
4927	29-Apr-86	827.6	544.9		6.6	66	480	9.0	186	570	7.8	94	14	25.0	4.6	0.0	232	30	20.0	14.0			400		<3
4927	22-Jul-86	827.6	547.5		6.4	64	580	16.0	231	650	7.5	83	18	30.0	5.4	0.0	230	40	33.0	14.0			390	<0.05	<3
4927	15-Oct-86	827.6	545.0		6.1	66	620	23.5	230	730	7.6	84	22	34.0	3.6	0.0	280	52	38.0	6.2	0.3	0.40	410	<0.05	<3
4927	14-Jan-87	827.6	542.8		6.8	65	500	23.0	240	700	7.2	91	21	30.0	4.7	0.0	310	63	23.0	15.0	0.4	0.30	430	<0.05	<3
4927	15-Apr-87	827.6	541.1		5.3	63	440	12.0	200	660	6.9	84	21	27.0	5.1	<0.6	290	72	20.0	16.0	0.3	0.30	410	<0.05	8.0
4927	24-Jul-87	827.6	536.9		7.4	70	500	5.0	254	720	7.3	92	21	31.0	4.8	<0.6	320	65	22.0	13.0			430	<0.05	<3
4927	21-Oct-87	827.6	530.9		7.0	63	400	37.5	200	610	7.6	70	9	15.0	2.8	<0.6	260	61	20.0	16.0	0.2	0.30	370	<0.05	<3

09-Feb-88

Note: NA= not available

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TABLE 2

GROUND WATER DATABASE REV: Oct-87

		WAT LEV (ft.)			FIELD MEASUREMENTS (ppm)				LABORATORY ANALYSES (ppm)					GENERAL MINERAL(ppm)									
WELL	DATE	REF PT.	W S E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	POH	TOC
4928	11-Feb-83	NA							550	7.6	79	17	28.5	4.9	0.0	248	64	21.1	2.0		0.43	373		
4928	02-Apr-84	NA								8.1	86	21	30.0	5.0	0.0	270	62	28.0	0.9		0.44	407		
4918	19-Jun-85	827.1	554.7	7.0	65	720	22.5	160	760	7.3	90	25	41.0	5.2	0.0	240	60	35.0	120.0			470	<0.50	<3
4918	17-Jul-85	827.1	553.7	7.1	66	690	17.5	263	760	7.1	93	23	35.0	5.5	0.0	290	53	37.0	110.0			450	<0.50	<3
4918	14-Aug-85	827.1	552.1	6.8	68	620	5.5		760	7.7	120	20	24.0	5.1	0.0	260	47	35.0	64.0	0.3	0.38	450	<0.05	<3
4918	19-Sep-85	827.1	549.7	6.4	65	230	21.0	220	740	7.0	130	22	23.0	4.1	0.0	260	49	39.0	130.0			470	<0.05	<3
4918	16-Jan-86	827.1	543.3	7.4	64	790		235	790	7.4	150	20	26.0	4.8	0.0	260	30	55.0	120.0			470	<0.05	<3
4918	29-Apr-86	827.1	545.3	6.8	66	600	14.0	224	740	7.8	150	19	26.0	5.0	0.0	280	30	34.0	74.0			500		<3
4918	22-Jul-86	827.1	547.4	7.4	67	700	16.0	220	810	7.7	135	21	26.0	36.0	0.0	240	27	33.0	72.0			470	<0.05	<3
4918	15-Oct-86	827.1	544.9	6.2	66	700	21.0	193	800	7.9	96	23	28.0	4.3	0.0	230	57	51.0	84.0	0.2	0.40	465	<0.05	<3
4918	14-Jan-87	827.1	542.7	6.9	63	600	17.0	200	800	7.4	100	23	31.0	5.2	0.0	276	60	33.0	83.0	0.4	0.40	510	<0.05	<3
4918	15-Apr-87	827.1	541.1	5.6	63	600	9.0	200	800	7.4	100	24	28.0	5.1	<0.6	284	62	31.0	87.0	0.3	0.40	490	0.08	17.0
4918	24-Jul-87	827.1	536.7	7.6	66	700	17.5	200	820	7.3	100	26	29.0	5.3	<0.6	290	52	35.0	86.0			500	<0.05	<3
4918	21-Oct-87	827.1	530.6	7.2	64	575	23.5	230	880	7.6	110	25	29.0	5.7	<0.6	320	57	34.0	130.0	0.3	0.30	510	<0.05	<3
4918a	31-Dec-84	804.8								8.0	64	7	26.0	3.0	0.0	199	58	16.0	13.0		0.47	340	<0.05	
4918a	19-Jun-85	804.8	548.0	11.0	70	400	0.0	40	460	10.3	13	<0.01	59.0	15.0	2.3	34	47	46.0	28.0			230	0.11	23.0
4918a	17-Jul-85	804.8	545.8	8.0	70	340	0.0	50	370	9.9	10	0	53.0	13.0	0.0	26	55	44.0	12.0			220	0.50	18.0
4918a	14-Aug-85	804.8	545.4	7.7	70	320	0.0		340	9.0	12	<2.2	44.0	13.0	6.7	16	64	46.0	<0.4	0.4	0.32	200	<0.05	18.0
4918a	19-Sep-85	804.8	542.4	9.9	64	490	0.0	41	350	9.1	13	0	43.0	8.8	5.3	32	43	41.0	18.0			220	<0.05	18.0
4918a	16-Jan-86	804.8	536.7	10.4	65	310		30	310	10.4	2	0	47.0	13.0	12.0	26	24	38.0	<4.43			190	<0.05	16.0
4918a	29-Apr-86	804.8	540.0	10.5	71	340	0.0	17	370	7.5	9.1	0.32	46.0	14.0	0.0	51	25	38.0	<4			200		16.0
4918a	22-Jul-86	804.8	541.2	7.0	71	450	33.0	167	430	6.2	17.0	3.70	47.0	14.0	0.0	95	25	38.0	0.7			210	0.05	20.5
4918a	15-Oct-86	804.8	539.1	5.8	70	430	70.0	190	410	6.9	17.0	5.30	52.5	12.0	0.0	130	12	52.0	1.2	0.2	0.20	250	0.09	11.0
4918a	14-Jan-87	804.8	537.8	6.4	68	350	40.0	171	400	6.8	20.0	6.50	54.0	13.0	0.0	179	<1	36.0	<0.4	0.3	0.20	230	0.06	<3
4918a	15-Apr-87	804.8	535.9	5.5	67	500	108.0	290	520	6.2	29.0	7.60	53.0	16.0	<0.6	200	<1	36.0	0.7	0.4	0.10	310	<0.05	100.0
4918a	24-Jul-87	804.8	531.2	7.2	73	700	28.0	365	500	6.7	34.0	10.00	55.0	15.0	<0.6	230	<1	37.0	0.8			280	<0.05	26.0
4918a	29-Oct-87	804.8	524.3	6.9	67	650	221.0	330	550	6.5	43.0	12.00	52.0	18.0	<0.6	270	6	33.0	0.9			320	<0.05	26.0
4927	17-Oct-84	827.6							900	7.0	80	30	40.0	5.1	0.0	400	70	20.0	10.0			500		
4927	19-Jun-85	827.6	554.9																					
4927	17-Jul-85	827.6	553.9	6.9	66	710	50.0	400	850	6.9	110	28	39.0	6.2	0.0	480	56	43.0	8.2			550	<0.05	<3
4927	14-Aug-85	827.6	552.5	7.0	69	750	15.0		770	7.4	100	23	29.0	5.5	0.0	380	49	23.0	<0.4	0.4	0.25	460	<0.05	<3
4927	19-Sep-85	827.6	550.0	6.4	67	750	24.0	354	760	7.0	130	23	26.0	4.0	0.0	370	50	13.0	32.0			490	<0.05	<3
4927	16-Jan-86	827.6	543.6	7.2	66	700		285	700	7.2	98	19	28.0	4.9	0.0	310	31	20.0	20.0			430	<0.05	<3
4927	29-Apr-86	827.6	544.9	6.6	66	480	9.0	186	570	7.8	94	14	25.0	4.6	0.0	232	30	20.0	14.0			400		<3
4927	22-Jul-86	827.6	547.5	6.4	64	580	16.0	231	650	7.5	83	18	30.0	5.4	0.0	230	40	33.0	14.0			390	<0.05	<3
4927	15-Oct-86	827.6	545.0	6.1	66	620	23.5	230	730	7.6	84	22	34.0	3.6	0.0	280	52	38.0	6.2	0.3	0.40	410	<0.05	<3
4927	14-Jan-87	827.6	542.8	6.8	65	500	23.0	240	700	7.2	91	21	30.0	4.7	0.0	310	63	23.0	15.0	0.4	0.30	430	<0.05	<3
4927	15-Apr-87	827.6	541.1	5.3	63	440	12.0	200	660	6.9	84	21	27.0	5.1	<0.6	290	72	20.0	16.0	0.3	0.30	410	<0.05	8.0
4927	24-Jul-87	827.6	536.9	7.4	70	500	5.0	254	720	7.3	92	21	31.0	4.8	<0.6	320	65	22.0	13.0			430	<0.05	<3
4927	21-Oct-87	827.6	530.9	7.0	63	400	37.5	200	610	7.6	70	9	15.0	2.8	<0.6	260	61	20.0	16.0	0.2	0.30	370	<0.05	<3

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Note: NA= not available

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TABLE 2
(cont)

		ORGANICS (ppb)			TRACE ELEMENTS (ppm)				TRACE ELEMENTS (ppm)							
WELL	DATE	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn
4928	11-Feb-83								0.060	0.090		0.050				0.220
4928	02-Apr-84		0.9	5.4	0.500	0.001	0.005	0.001	0.010		0.010		0.010	0.010	0.005	0.185
4918	19-Jun-85	7.0	3.0	17.0					<0.086	0.090		<0.05				0.690
4918	17-Jul-85	36.0	7.0	<1					<0.09	0.080		<0.05				0.590
4918	14-Aug-85								<0.08	<0.046		<0.02				0.400
4918	19-Sep-85	5.0	7.0	<1					<0.035	<0.042		<0.022				0.041
4918	16-Jan-86	26.0	2.0	<1					<0.033	<0.063		<0.029				0.240
4918	29-Apr-86	20.0	<1	<1					<0.02	<0.2		<0.01				0.320
4918	22-Jul-86	27.0	2.0	<1					<0.02	<0.01		<0.01				0.380
4918	15-Oct-86	33.5	1.0	<1		<0.02	<0.02	<0.01	<0.04	0.230	<0.0005	<0.003	<0.02		<0.02	0.260
4918	14-Jan-87	50.0	1.0	<1		<0.01	<0.02	<0.01	<0.03	0.070	<0.0005	<0.006	<0.02	<0.06	<0.02	0.150
4918	15-Apr-87	46.0	1.0	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560
4918	24-Jul-87	38.0	4.0	<1		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	<0.005	<0.02	<0.04	<0.02	0.160
4918	21-Oct-87	45.0	2.0	<1		<0.01	<0.01	<0.02	<0.02	0.150	<0.0008	<0.005	<0.01	<0.04	<0.02	0.130
4918a	31-Dec-84	29.0	4.0			<0.001	<0.01	0.001	0.010	0.300	0.001	0.010	0.010	0.010	0.010	0.010
4918a	19-Jun-85	30.0	7.0	<1					<0.086	<0.09		<0.05				<0.021
4918a	17-Jul-85	5.0	3.0	4.0					<0.09	0.790		<0.05				<0.023
4918a	14-Aug-85								<0.08	<0.046		<0.02				<0.008
4918a	19-Sep-85	<1	7.0	6.0					<0.035	<0.042		<0.022				0.023
4918a	16-Jan-86	8.0	12.0	10.0					<0.033	0.980		<0.029				<0.008
4918a	29-Apr-86	5.0	9.0	17.0					<0.02	<0.2		<0.01				<0.04
4918a	22-Jul-86	3.0	<1	22.0					<0.02	<0.2		0.310				<0.04
4918a	15-Oct-86	<1	3.0	24.0		<0.02	<0.02	<0.01	<0.04	54.00	<0.0005	0.540	<0.02		<0.02	<0.08
4918a	14-Jan-87	<1	<1	8.0		<0.01	<0.02	<0.01	<0.03	<.03	<0.0005	0.310	<0.02	<0.06	<0.02	<0.08
4918a	15-Apr-87	<1	3.0	5.0		<0.01	<0.01	<0.01	<0.02	85.00	<0.0008	0.470	<0.01	<0.04	<0.02	0.160
4918a	24-Jul-87	<1	<1	20.0		<0.02	<0.03	<0.02	<0.02	47.00	<0.0008	0.440	<0.02	<0.04	<0.02	<0.03
4918a	29-Oct-87	<1	<1	18.0		<0.02	<0.01	<0.02	<0.02	26.00	<0.0008	0.360	<0.01	<0.04	<0.02	0.210
4927	17-Oct-84		2.0						<0.06	0.050		0.035				0.014
4927	19-Jun-85															
4927	17-Jul-85	<1	1.0	<1					<0.09	0.570		0.060				0.100
4927	14-Aug-85								<0.08	<0.046		<0.02				0.050
4927	19-Sep-85	<1	4.0	<1					<0.035	<0.042		0.033				0.052
4927	16-Jan-86	<1	2.0	<1					<0.033	<0.063		<0.029				0.034
4927	29-Apr-86	<1	1.0	<1					<0.02	<0.2		<0.01				0.060
4927	22-Jul-86	<1	2.0	<1					<0.02	<0.2		<0.01				0.080
4927	15-Oct-86	<1	2.0	<1		<0.02	<0.02	<0.01	<0.04	0.75	<0.0005	1.400	<0.02		<0.02	<0.08
4927	14-Jan-87	<1	2.0	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	0.007	<0.02	<0.06	<0.02	<0.08
4927	15-Apr-87	<1	1.0	<1		<0.01	<0.01	<0.01	<0.02	0.69	<0.0008	<0.005	<0.01	<0.04	<0.02	0.070
4927	24-Jul-87	<1	2.0	<1		<0.02	<0.01	<0.02	<0.02	<.02	<0.0008	0.006	<0.02	<0.04	<0.02	0.110
4927	21-Oct-87	<1	<1	<1		<0.01	<0.01	0.020	0.020	0.19	<0.0008	0.005	<0.01	<0.04	<0.02	<0.03

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Note: NA= not available

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TABLE 2
(cont'd)

		ORGANICS (ppb)			TRACE ELEMENTS (ppm)											
WELL	DATE	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn
4928	11-Feb-83								0.060	0.090		0.050				0.220
4928	02-Apr-84		0.9	5.4	0.500	0.001	0.005	0.001	0.010		0.010		0.010	0.010	0.005	0.185
4918	19-Jun-85	7.0	3.0	17.0					<0.086	0.090		<0.05				0.690
4918	17-Jul-85	36.0	7.0	<1					<0.09	0.080		<0.05				0.590
4918	14-Aug-85								<0.08	<0.046		<0.02				0.400
4918	19-Sep-85	5.0	7.0	<1					<0.035	<0.042		<0.022				0.041
4918	16-Jan-86	26.0	2.0	<1					<0.033	<0.063		<0.029				0.240
4918	29-Apr-86	20.0	<1	<1					<0.02	<0.2		<0.01				0.320
4918	22-Jul-86	27.0	2.0	<1					<0.02	<0.01		<0.01				0.380
4918	15-Oct-86	33.5	1.0	<1		<0.02	<0.02	<0.01	<0.04	0.230	<0.0005	<0.003	<0.02		<0.02	0.260
4918	14-Jan-87	50.0	1.0	<1		<0.01	<0.02	<0.01	<0.03	0.070	<0.0005	<0.006	<0.02	<0.06	<0.02	0.150
4918	15-Apr-87	46.0	1.0	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560
4918	24-Jul-87	38.0	4.0	<1		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	<0.005	<0.02	<0.04	<0.02	0.160
4918	21-Oct-87	45.0	2.0	<1		<0.01	<0.01	<0.02	<0.02	0.150	<0.0008	<0.005	<0.01	<0.04	<0.02	0.130
4918a	31-Dec-84	29.0	4.0			<0.001	<0.01	0.001	0.010	0.300	0.001	0.010	0.010	0.010	0.010	0.010
4918a	19-Jun-85	30.0	7.0	<1					<0.086	<0.09		<0.05				<0.021
4918a	17-Jul-85	5.0	3.0	4.0					<0.09	0.790		<0.05				<0.023
4918a	14-Aug-85								<0.08	<0.046		<0.02				<0.008
4918a	19-Sep-85	<1	7.0	6.0					<0.035	<0.042		<0.022				0.023
4918a	16-Jan-86	8.0	12.0	10.0					<0.033	0.980		<0.029				<0.008
4918a	29-Apr-86	5.0	9.0	17.0					<0.02	<0.2		<0.01				<0.04
4918a	22-Jul-86	3.0	<1	22.0					<0.02	<0.2		0.310				<0.04
4918a	15-Oct-86	<1	3.0	24.0		<0.02	<0.02	<0.01	<0.04	54.00	<0.0005	0.540	<0.02		<0.02	<0.08
4918a	14-Jan-87	<1	<1	8.0		<0.01	<0.02	<0.01	<0.03	<.03	<0.0005	0.310	<0.02	<0.06	<0.02	<0.08
4918a	15-Apr-87	<1	3.0	5.0		<0.01	<0.01	<0.01	<0.02	85.00	<0.0008	0.470	<0.01	<0.04	<0.02	0.160
4918a	24-Jul-87	<1	<1	20.0		<0.02	<0.03	<0.02	<0.02	47.00	<0.0008	0.440	<0.02	<0.04	<0.02	<0.03
4918a	29-Oct-87	<1	<1	18.0		<0.02	<0.01	<0.02	<0.02	26.00	<0.0008	0.360	<0.01	<0.04	<0.02	0.210
4927	17-Oct-84		2.0						<0.06	0.050		0.035				0.014
4927	19-Jun-85															
4927	17-Jul-85	<1	1.0	<1					<0.09	0.570		0.060				0.100
4927	14-Aug-85								<0.08	<0.046		<0.02				0.050
4927	19-Sep-85	<1	4.0	<1					<0.035	<0.042		0.033				0.052
4927	16-Jan-86	<1	2.0	<1					<0.033	<0.063		<0.029				0.034
4927	29-Apr-86	<1	1.0	<1					<0.02	<0.2		<0.01				0.060
4927	22-Jul-86	<1	2.0	<1					<0.02	<0.2		<0.01				0.080
4927	15-Oct-86	<1	2.0	<1		<0.02	<0.02	<0.01	<0.04	0.75	<0.0005	1.400	<0.02		<0.02	<0.08
4927	14-Jan-87	<1	2.0	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	0.007	<0.02	<0.06	<0.02	<0.08
4927	15-Apr-87	<1	1.0	<1		<0.01	<0.01	<0.01	<0.02	0.69	<0.0008	<0.005	<0.01	<0.04	<0.02	0.070
4927	24-Jul-87	<1	2.0	<1		<0.02	<0.01	<0.02	<0.02	<.02	<0.0008	0.006	<0.02	<0.04	<0.02	0.110
4927	21-Oct-87	<1	<1	<1		<0.01	<0.01	0.020	0.020	0.19	<0.0008	0.005	<0.01	<0.04	<0.02	<0.03

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Note: NA= not available

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TABLE 2
(cont)

		ORGANICS (ppb)			TRACE ELEMENTS (ppm)				TRACE ELEMENTS (ppm)							
WELL	DATE	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn
4928a	03-May-84		1.0	8.8	0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010
4928a	31-Dec-84	44.0	5.3						<0.09	0.220		<0.04				<0.015
4928a	19-Jun-85	<1	1.0	3.0					<0.086	<0.09		0.290				0.670
4928a	17-Jul-85	<1	1.0	2.0					<0.09	0.060		0.240				0.600
4928a	14-Aug-85								<0.08	<0.046		0.230				0.600
4928a	19-Sep-85	37.0	2.0	2.0					<0.035	<0.042		0.260				0.800
4928a	16-Jan-86	<1	1.0	2.0					<0.033	<0.063		0.390				0.650
4928a	29-Apr-86	<1	<1	<1					<0.02	<0.2		0.320				0.700
4928a	22-Jul-86	<1	2.0	<1					<0.02	<0.2		0.400				0.490
4928a	15-Oct-86	<1	3.0	1.0		<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520
4928a	14-Jan-87	<1	<1	<1		<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520
4928a	15-Apr-87	<1	<1	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560
4928a	24-Jul-87	<1	2.0	1.0		<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480
4928a	21-Oct-87	<1	2.0	<1		<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350
4928b	23-Oct-84		4.0						<0.06	<0.08		2.200				0.082
4928b	19-Jun-85	<1	<1	<1					<0.086	<0.09		2.270				0.077
4928b	17-Jul-85	<1	<1	3.0					<0.09	<0.06		2.400				0.081
4928b	14-Aug-85								<0.08	<0.046		2.500				0.050
4928b	19-Sep-85	<1	3.0	<1					<0.035	<0.042		2.400				0.067
4928b	16-Jan-86	<1	<1	<1					<0.033	<0.063		1.700				0.051
4928b	29-Apr-86	<1	1.0	<1					<0.02	<0.2		1.300				0.070
4928b	22-Jul-86	<1	3.0	<1					<0.02	<0.2		1.100				0.050
4928b	15-Oct-86	<1	<1			<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310
4928b	14-Jan-87	<1	2.0	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08
4928b	15-Apr-87	<1	2.0	<1		<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.030
4928b	24-Jul-87	<1	4.0	1.0		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.040
4928b	21-Oct-87	<1	<1	<1		<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.030
4916c	19-Jun-85	<1	18.0	<1					<0.086	<0.09		<0.05				<0.021
4916c	17-Jul-85	<1	14.0	<1					<0.09	<0.06		<0.05				<0.023
4916c	14-Aug-85								<0.08	<0.046		<0.02				<0.008
4916c	19-Sep-85	37.0	16.0	<1					<0.035	<0.042		<0.022				0.029
4916c	16-Jan-86	<1	16.0	<1					<0.033	<0.063		<0.029				0.008

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Note: NA= not available

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TABLE 2
(cont'd)

		ORGANICS (ppb)			TRACE ELEMENTS (ppm)											
WELL	DATE	TCE	PCE	1,2DCA	Al	Ag	As	Cd	Cu	Fe	Hg	Mn	Pb	Ni	Se	Zn
4928a	03-May-84		1.0	8.8	0.500	0.001	0.005	0.001	0.050	0.700	0.010	0.050	0.010	0.050	0.005	0.010
4928a	31-Dec-84	44.0	5.3						<0.09	0.220		<0.04				<0.015
4928a	19-Jun-85	<1	1.0	3.0					<0.086	<0.09		0.290				0.670
4928a	17-Jul-85	<1	1.0	2.0					<0.09	0.060		0.240				0.600
4928a	14-Aug-85								<0.08	<0.046		0.230				0.600
4928a	19-Sep-85	37.0	2.0	2.0					<0.035	<0.042		0.260				0.800
4928a	16-Jan-86	<1	1.0	2.0					<0.033	<0.063		0.390				0.650
4928a	29-Apr-86	<1	<1	<1					<0.02	<0.2		0.320				0.700
4928a	22-Jul-86	<1	2.0	<1					<0.02	<0.2		0.400				0.490
4928a	15-Oct-86	<1	3.0	1.0		<0.02	<0.02	<0.01	<0.04	<0.1	<0.0005	0.520	<0.02		<0.02	0.520
4928a	14-Jan-87	<1	<1	<1		<0.01	<0.03	<0.01	<0.03	<0.03	<0.0005	0.500	<0.02	<0.06	<0.02	0.520
4928a	15-Apr-87	<1	<1	<1		<0.01	<0.01	<0.01	<0.02	<0.02	<0.0008	0.590	<0.01	<0.04	<0.02	0.560
4928a	24-Jul-87	<1	2.0	1.0		<0.01	<0.01	<0.02	<0.02	<0.02	<0.0008	0.610	<0.02	<0.04	<0.02	0.480
4928a	21-Oct-87	<1	2.0	<1		<0.01	<0.01	<0.02	<0.02	0.12	<0.0008	0.460	<0.01	<0.04	<0.02	0.350
4928b	23-Oct-84		4.0						<0.06	<0.08		2.200				0.082
4928b	19-Jun-85	<1	<1	<1					<0.086	<0.09		2.270				0.077
4928b	17-Jul-85	<1	<1	3.0					<0.09	<0.06		2.400				0.081
4928b	14-Aug-85								<0.08	<0.046		2.500				0.050
4928b	19-Sep-85	<1	3.0	<1					<0.035	<0.042		2.400				0.067
4928b	16-Jan-86	<1	<1	<1					<0.033	<0.063		1.700				0.051
4928b	29-Apr-86	<1	1.0	<1					<0.02	<0.2		1.300				0.070
4928b	22-Jul-86	<1	3.0	<1					<0.02	<0.2		1.100				0.050
4928b	15-Oct-86	<1	<1			<0.02	<0.02	<0.01	<0.04	0.29	<0.0005	0.007	<0.02		<0.02	0.310
4928b	14-Jan-87	<1	2.0	<1		<0.01	<0.02	<0.01	<0.03	<0.03	<0.0005	1.300	<0.02	<0.06	<0.02	<0.08
4928b	15-Apr-87	<1	2.0	<1		<0.01	<0.01	<0.01	<0.02	0.88	<0.0008	1.400	<0.01	<0.04	<0.02	0.030
4928b	24-Jul-87	<1	4.0	1.0		<0.02	<0.01	<0.02	<0.02	<0.02	<0.0008	1.500	<0.02	<0.04	<0.02	0.040
4928b	21-Oct-87	<1	<1	<1		<0.01	<0.01	<0.02	<0.02	0.20	<0.0008	1.500	<0.01	<0.04	<0.02	0.030
4916c	19-Jun-85	<1	18.0	<1					<0.086	<0.09		<0.05				<0.021
4916c	17-Jul-85	<1	14.0	<1					<0.09	<0.06		<0.05				<0.023
4916c	14-Aug-85								<0.08	<0.046		<0.02				<0.008
4916c	19-Sep-85	37.0	16.0	<1					<0.035	<0.042		<0.022				0.029
4916c	16-Jan-86	<1	16.0	<1					<0.033	<0.063		<0.029				0.008

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Note: NA= not available

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TABLE 2
(cont)

GROUND WATER DATABASE REV: Oct-87

		WAT LEV (ft.)			FIELD MEASUREMENTS (ppm)				LABORATORY ANALYSES (ppm)						GENERAL MINERAL(ppm)									
WELL	DATE	REF PT.	W	S	E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	POH	TOC
4928a	03-May-84	803.8										7.2	120	28	48.0	6.0	0.0	363	75	65.0	15.0		0.35	650		
4928a	31-Dec-84	803.8									560	7.7	73	16	26.0	4.2	0.0	280	58	6.5	12.0			351		
4928a	19-Jun-85	803.8	549.2	7.1		69	1100	89.0	506	1300	7.0	130	36	90.0	9.0	0.0	490	46	87.0	16.0			750	<0.05	8.0
4928a	17-Jul-85	803.8	547.9	6.8		68	1180	102.0	480	1300	6.9	120	34	93.0	8.6	0.0	620	59	98.0	8.9			730	0.06	7.5
4928a	14-Aug-85	803.8	546.4	6.8		74	1250	22.5		1400	7.6	230	33	79.0	11.0	0.0	610	44	110.0	<0.4	0.8	0.25	790	<0.05	120.0
4928a	19-Sep-85	803.8	543.9	6.3		68	1250	40.5	555	1500	6.8	250	35	78.0	6.0	0.0	670	55	81.0	25.0			830	<0.05	14.0
4928a	16-Jan-86	803.8	538.5	7.0		66	1400		180	1400	7.0	160	40	91.0	8.6	0.0	620	26	150.0	5.4			880	<0.05	20.0
4928a	29-Apr-86	803.8	539.8	6.6		68	900	68.0	350	1100	7.8	170	27	63.0	7.6	0.0	488	27	75.0	<4			580		29.0
4928a	22-Jul-86	803.8	541.7	7.3		69	1200	66.0	460	1300	7.1	170	36	80.0	8.0	0.0	390	37	260.0	8.6			780	0.11	5.0
4928a	15-Oct-86	803.8	539.9	5.9		67	1200	26.0	470	1400	7.4	160	41	84.0	3.8	0.0	490	55	130.0	12.0	0.6	0.30	810	<0.05	3.0
4928a	14-Jan-87	803.8	538.5	6.9		66	340	75.0	460	1400	7.0	160	38	82.0	7.6	0.0	590	54	120.0	12.0	0.8	0.30	820	<0.05	10.0
4928a	15-Apr-87	803.8	536.9	5.8		69	1100	42.5	490	1500	6.8	170	44	85.0	6.6	<0.6	650	62	130.0	16.4	0.8	0.30	910	<0.05	18.0
4928a	24-Jul-87	803.8	532.6	7.2		70	1200	35.0	515	1400	7.0	170	47	110.0	8.4	<0.6	630	58	140.0	13.0			840	<0.05	20.0
4928a	21-Oct-87	803.8	526.4	6.9		66	760	34.5	436	1300	7.7	140	34	82.0	8.5	<0.6	590	56	83.0	19.0	0.6	0.30	760	<0.05	17.0
4928b	23-Oct-84	823.1									1000	7.1	110	20	100.0	5.4	0.0	470	60	40.0	19.0			620		
4928b	19-Jun-85	823.1	552.7	8.4		70	900	66.0	392	870	7.1	82	24	92.0	6.3	0.0	450	53	38.0	39.0			560	<0.05	4.0
4928b	17-Jul-85	823.1	551.7	6.8		74	800	60.0	310	900	6.9	82	24	84.0	6.2	0.0	450	68	40.0	20.0			520	0.06	6.1
4928b	14-Aug-85	823.1	550.3	7.2		72	850	13.0		860	7.8	120	20	65.0	7.2	0.0	390	56	37.0	12.0	0.4	0.32	530	<0.05	<3
4928b	19-Sep-85	823.1	547.9	6.5		70	740	30.5	350	820	6.9	130	23	49.0	3.3	0.0	380	61	33.0	36.0			510	<0.05	<3
4928b	16-Jan-86	823.1	541.8	7.2		68	750		321	750	7.2	107	22	36.0	4.4	0.0	340	28	25.0	26.0			460	<0.05	<3
4928b	29-Apr-86	823.1	542.9	6.7		71	520	18.0	255	600	8.0	120	17	30.0	5.2	0.0	341	30	20.0	7.0			320		<3
4928b	22-Jul-86	823.1	545.1	7.3		70	620	30.0	270	700	7.4	110	20	37.0	4.4	0.0	290	29	22.0	6.9			420	0.12	6.0
4928b	15-Oct-86	823.1	543.1	6.0		68	690	33.5	255	680	7.6	87	10	29.0	4.2	0.0	280	60	35.0	15.0	0.3	0.30	440	<0.05	<3
4928b	14-Jan-87	823.1	541.3	6.7		66	500	16.5	240	700	7.3	88	21	35.0	4.2	0.0	340	51	18.0	5.3	0.5	0.40	420	0.10	<3
4928b	15-Apr-87	823.1	539.6	6.2		65	450	25.0	250	680	7.0	80	22	33.0	4.0	<0.6	340	54	18.0	6.6	0.4	0.40	410	0.08	11.0
4928b	24-Jul-87	823.1	535.5	6.8		70	550	8.0	290	720	7.4	87	25	36.0	4.3	<0.6	350	50	24.0	6.8			430	<0.05	<3
4928b	21-Oct-87	823.1	529.4	6.9		66	465	65.0	291	740	7.9	90	22	35.0	5.0	<0.6	370	50	21.0	6.4	0.3	0.4	430	<0.05	<3
4916c	19-Jun-85	878.0		7.1		72	510	7.0	175	570	7.7	57	25	37.0	4.5	0.0	220	51	18.0	30.0			350	<0.05	3.0
4916c	17-Jul-85	878.0		7.2		74	460	6.5	179	520	7.5	56	15	34.0	3.8	0.0	0	71	20.0	10.0			290	0.06	5.8
4916c	14-Aug-85	878.0		7.1		68	490	2.5		520	7.7	88	13	26.0	3.8	0.0	200	73	14.0	15.0	0.3	0.60	330	<0.05	<3
4916c	19-Sep-85	878.0	565.1	6.6		62	500	6.0	205	510	7.4	66	13	24.0	3.0	0.0	180	50	6.7	34.0			320	<0.05	<3
4916c	16-Jan-86	878.0	556.8	7.7		66	430		180	430	7.7	69	13	26.0	3.9	0.0	200	33	16.0	23.0			320	<0.05	<3

09-Feb-88

Note: NA= not available

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TABLE 2
(cont'd)

GROUND WATER DATABASE REV: Oct-87

		WAT LEV (ft.)		FIELD MEASUREMENTS (ppm)					LABORATORY ANALYSES (ppm)					GENERAL MINERAL(ppm)								
WELL	DATE	REF PT.	W S E	FpH	T(F)	ECf	CO2	Alk	EC	LpH	Ca	Mg	Na	K	CO3	HCO3	SO4	Cl	NO3	B	F	TDS	POH	TOC
4928a	03-May-84	803.8								7.2	120	28	48.0	6.0	0.0	363	75	65.0	15.0		0.35	650		
4928a	31-Dec-84	803.8							560	7.7	73	16	26.0	4.2	0.0	280	58	6.5	12.0			351		
4928a	19-Jun-85	803.8	549.2	7.1	69	1100	89.0	506	1300	7.0	130	36	90.0	9.0	0.0	490	46	87.0	16.0			750	<0.05	8.0
4928a	17-Jul-85	803.8	547.9	6.8	68	1180	102.0	480	1300	6.9	120	34	93.0	8.6	0.0	620	59	98.0	8.9			730	0.06	7.5
4928a	14-Aug-85	803.8	546.4	6.8	74	1250	22.5		1400	7.6	230	33	79.0	11.0	0.0	610	44	110.0	<0.4	0.8	0.25	790	<0.05	120.0
4928a	19-Sep-85	803.8	543.9	6.3	68	1250	40.5	555	1500	6.8	250	35	78.0	6.0	0.0	670	55	81.0	25.0			830	<0.05	14.0
4928a	16-Jan-86	803.8	538.5	7.0	66	1400		180	1400	7.0	160	40	91.0	8.6	0.0	620	26	150.0	5.4			880	<0.05	20.0
4928a	29-Apr-86	803.8	539.8	6.6	68	900	68.0	350	1100	7.8	170	27	63.0	7.6	0.0	488	27	75.0	<4			580		29.0
4928a	22-Jul-86	803.8	541.7	7.3	69	1200	66.0	460	1300	7.1	170	36	80.0	8.0	0.0	390	37	260.0	8.6			780	0.11	5.0
4928a	15-Oct-86	803.8	539.9	5.9	67	1200	26.0	470	1400	7.4	160	41	84.0	3.8	0.0	490	55	130.0	12.0	0.6	0.30	810	<0.05	3.0
4928a	14-Jan-87	803.8	538.5	6.9	66	340	75.0	460	1400	7.0	160	38	82.0	7.6	0.0	590	54	120.0	12.0	0.8	0.30	820	<0.05	10.0
4928a	15-Apr-87	803.8	536.9	5.8	69	1100	42.5	490	1500	6.8	170	44	85.0	6.6	<0.6	650	62	130.0	16.4	0.8	0.30	910	<0.05	18.0
4928a	24-Jul-87	803.8	532.6	7.2	70	1200	35.0	515	1400	7.0	170	47	110.0	8.4	<0.6	630	58	140.0	13.0			840	<0.05	20.0
4928a	21-Oct-87	803.8	526.4	6.9	66	760	34.5	436	1300	7.7	140	34	82.0	8.5	<0.6	590	56	83.0	19.0	0.6	0.30	760	<0.05	17.0
4928b	23-Oct-84	823.1							1000	7.1	110	20	100.0	5.4	0.0	470	60	40.0	19.0			620		
4928b	19-Jun-85	823.1	552.7	8.4	70	900	66.0	392	870	7.1	82	24	92.0	6.3	0.0	450	53	38.0	39.0			560	<0.05	4.0
4928b	17-Jul-85	823.1	551.7	6.8	74	800	60.0	310	900	6.9	82	24	84.0	6.2	0.0	450	68	40.0	20.0			520	0.06	6.1
4928b	14-Aug-85	823.1	550.3	7.2	72	850	13.0		860	7.8	120	20	65.0	7.2	0.0	390	56	37.0	12.0	0.4	0.32	530	<0.05	<3
4928b	19-Sep-85	823.1	547.9	6.5	70	740	30.5	350	820	6.9	130	23	49.0	3.3	0.0	380	61	33.0	36.0			510	<0.05	<3
4928b	16-Jan-86	823.1	541.8	7.2	68	750		321	750	7.2	107	22	36.0	4.4	0.0	340	28	25.0	26.0			460	<0.05	<3
4928b	29-Apr-86	823.1	542.9	6.7	71	520	18.0	255	600	8.0	120	17	30.0	5.2	0.0	341	30	20.0	7.0			320		<3
4928b	22-Jul-86	823.1	545.1	7.3	70	620	30.0	270	700	7.4	110	20	37.0	4.4	0.0	290	29	22.0	6.9			420	0.12	6.0
4928b	15-Oct-86	823.1	543.1	6.0	68	690	33.5	255	680	7.6	87	10	29.0	4.2	0.0	280	60	35.0	15.0	0.3	0.30	440	<0.05	<3
4928b	14-Jan-87	823.1	541.3	6.7	66	500	16.5	240	700	7.3	88	21	35.0	4.2	0.0	340	51	18.0	5.3	0.5	0.40	420	0.10	<3
4928b	15-Apr-87	823.1	539.6	6.2	65	450	25.0	250	680	7.0	80	22	33.0	4.0	<0.6	340	54	18.0	6.6	0.4	0.40	410	0.08	11.0
4928b	24-Jul-87	823.1	535.5	6.8	70	550	8.0	290	720	7.4	87	25	36.0	4.3	<0.6	350	50	24.0	6.8			430	<0.05	<3
4928b	21-Oct-87	823.1	529.4	6.9	66	465	65.0	291	740	7.9	90	22	35.0	5.0	<0.6	370	50	21.0	6.4	0.3	0.4	430	<0.05	<3
4916c	19-Jun-85	878.0		7.1	72	510	7.0	175	570	7.7	57	25	37.0	4.5	0.0	220	51	18.0	30.0			350	<0.05	3.0
4916c	17-Jul-85	878.0		7.2	74	460	6.5	179	520	7.5	56	15	34.0	3.8	0.0	0	71	20.0	10.0			290	0.06	5.8
4916c	14-Aug-85	878.0		7.1	68	490	2.5		520	7.7	88	13	26.0	3.8	0.0	200	73	14.0	15.0	0.3	0.60	330	<0.05	<3
4916c	19-Sep-85	878.0	565.1	6.6	62	500	6.0	205	510	7.4	66	13	24.0	3.0	0.0	180	50	6.7	34.0			320	<0.05	<3
4916c	16-Jan-86	878.0	556.8	7.7	66	430		180	430	7.7	69	13	26.0	3.9	0.0	200	33	16.0	23.0			320	<0.05	<3

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Note: NA= not available

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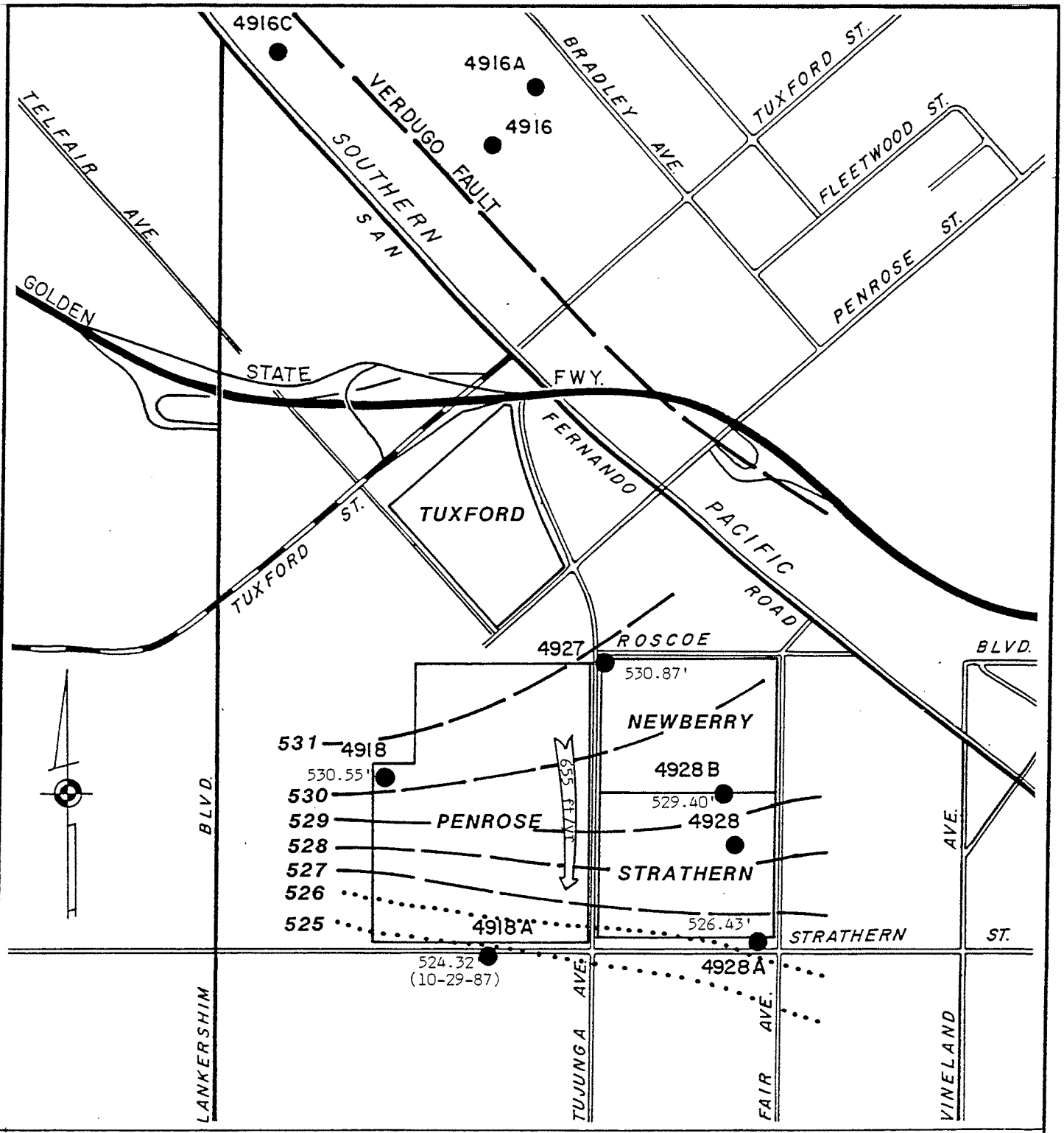

EXPLANATION

4928 ● WELL LOCATION AND NUMBER

——— GROUND WATER CONTOUR in feet asl

530.87' WATER ELEVATION in feet asl

655 GROUND WATER VELOCITY & DIRECTION in feet/year

BASEMAP FROM U.S. GEOLOGICAL SURVEY 7½ MINUTE BURBANK (1972) AND VAN NUYS (1972) QUADRANGLE.

OCTOBER 1987

GROUND WATER ELEVATIONS

0 1000 2000

SCALE IN FEET

PLATE 1

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-4003-02 DATE 02-10-88 PROJ. MGR. AC DFTR. MM

004398

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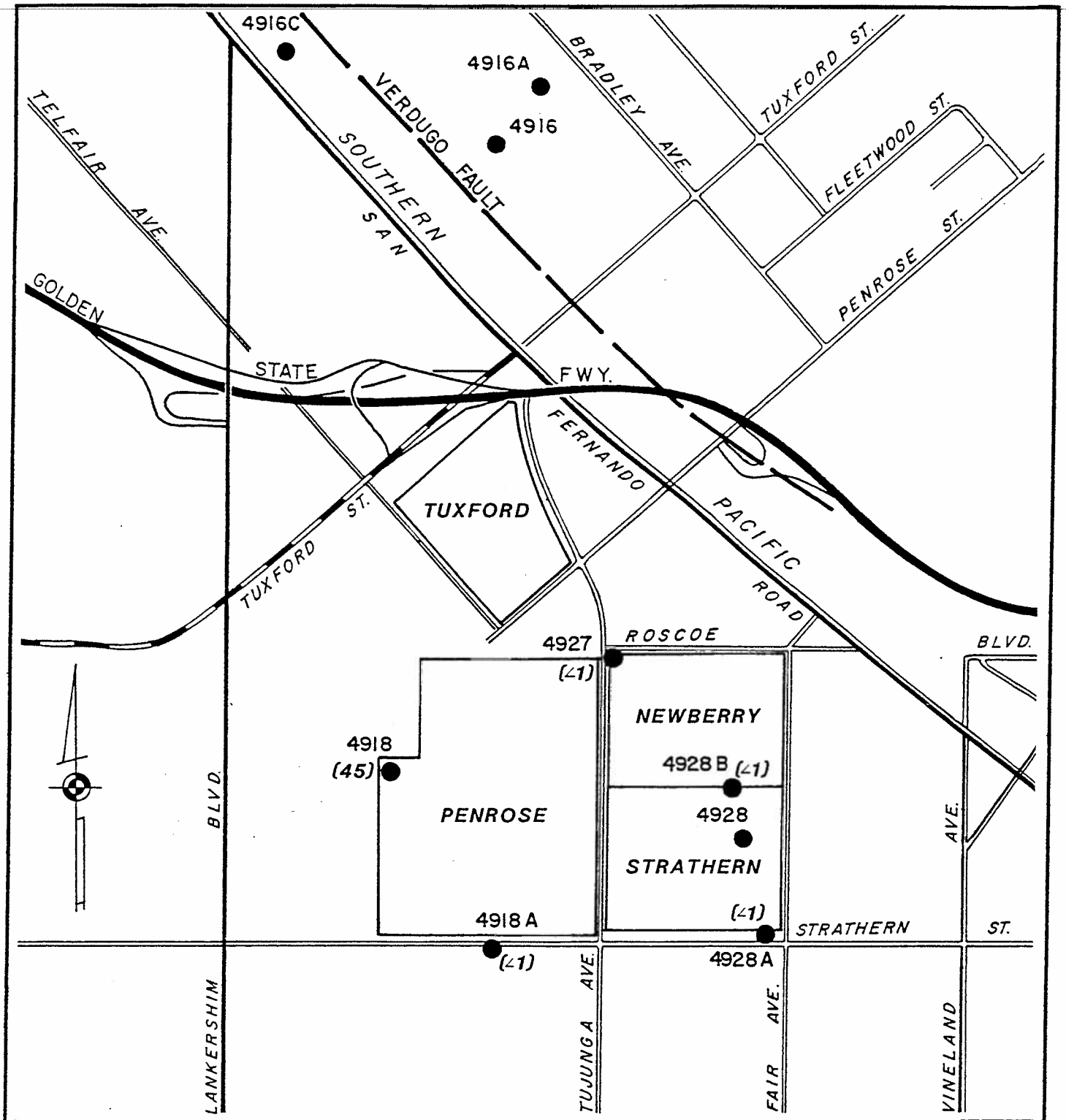

EXPLANATION

4928 ● WELL NUMBER AND LOCATION

(∠1) TCE in ppb

BASEMAP FROM U.S. GEOLOGICAL SURVEY 7½ MINUTE BURBANK (1972) AND VAN NUYS (1972) QUADRANGLE.

OCTOBER 1987

TCE CONCENTRATION

0 1000 2000

SCALE IN FEET

PLATE 2

LAW ENVIRONMENTAL, INC.

004325

PROJECT No. 58-4003-02 DATE 02-10-88 PROJ. MGR. AC DFTR. MA

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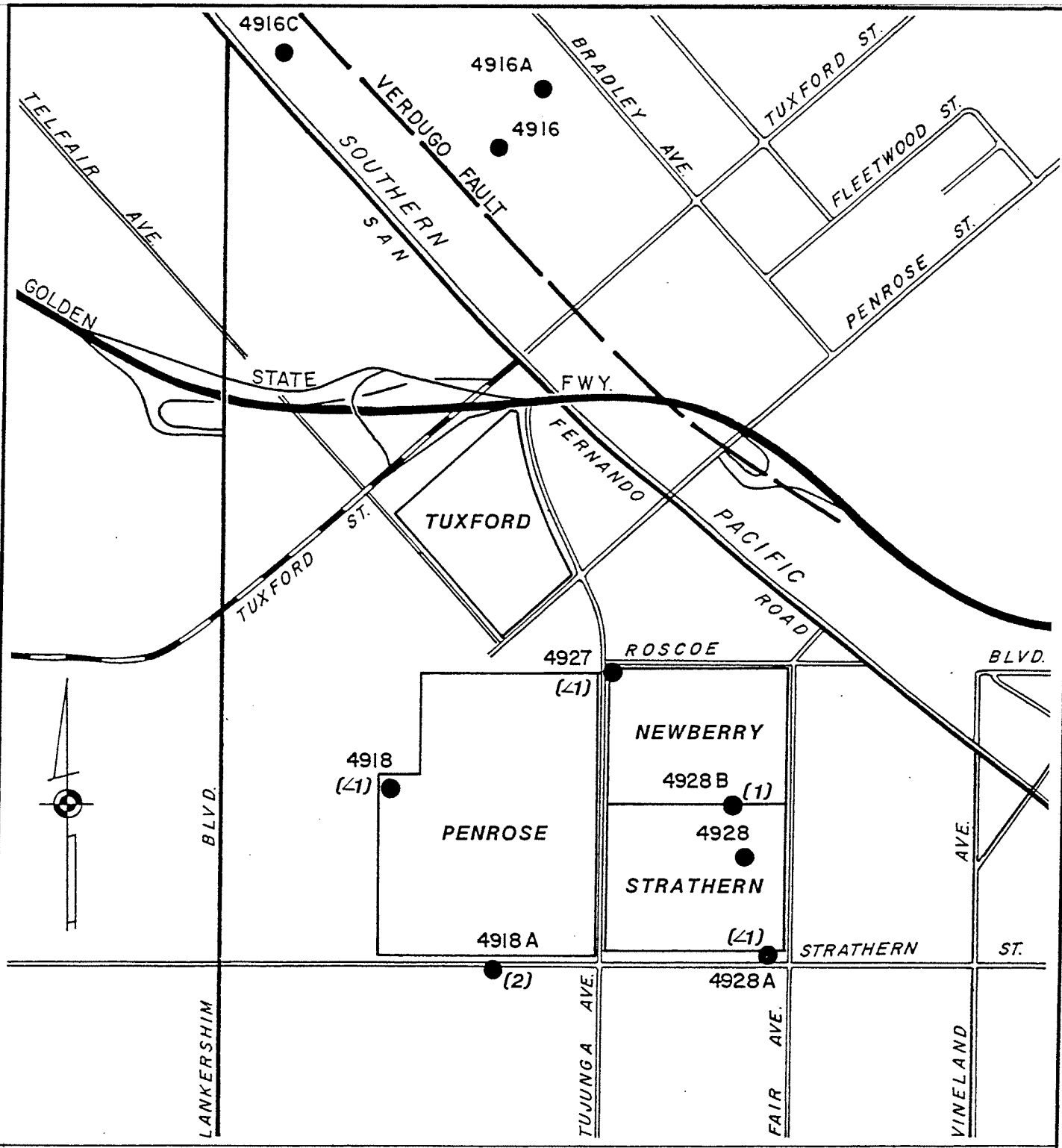

EXPLANATION

4928 ● WELL LOCATION AND NUMBER

(41) 1,1 DCA in ppb

BASEMAP FROM U.S. GEOLOGICAL SURVEY 7½ MINUTE BURBANK (1972) AND VAN NUYS (1972) QUADRANGLE.

OCTOBER 1987

1,1 DCA CONCENTRATION

0 1000 2000

SCALE IN FEET

PLATE 3

LAW ENVIRONMENTAL, INC.

004326

PROJECT No. 58-9003-02 DATE 02-10-88 PROJ. MGR. AC DFTR. MA

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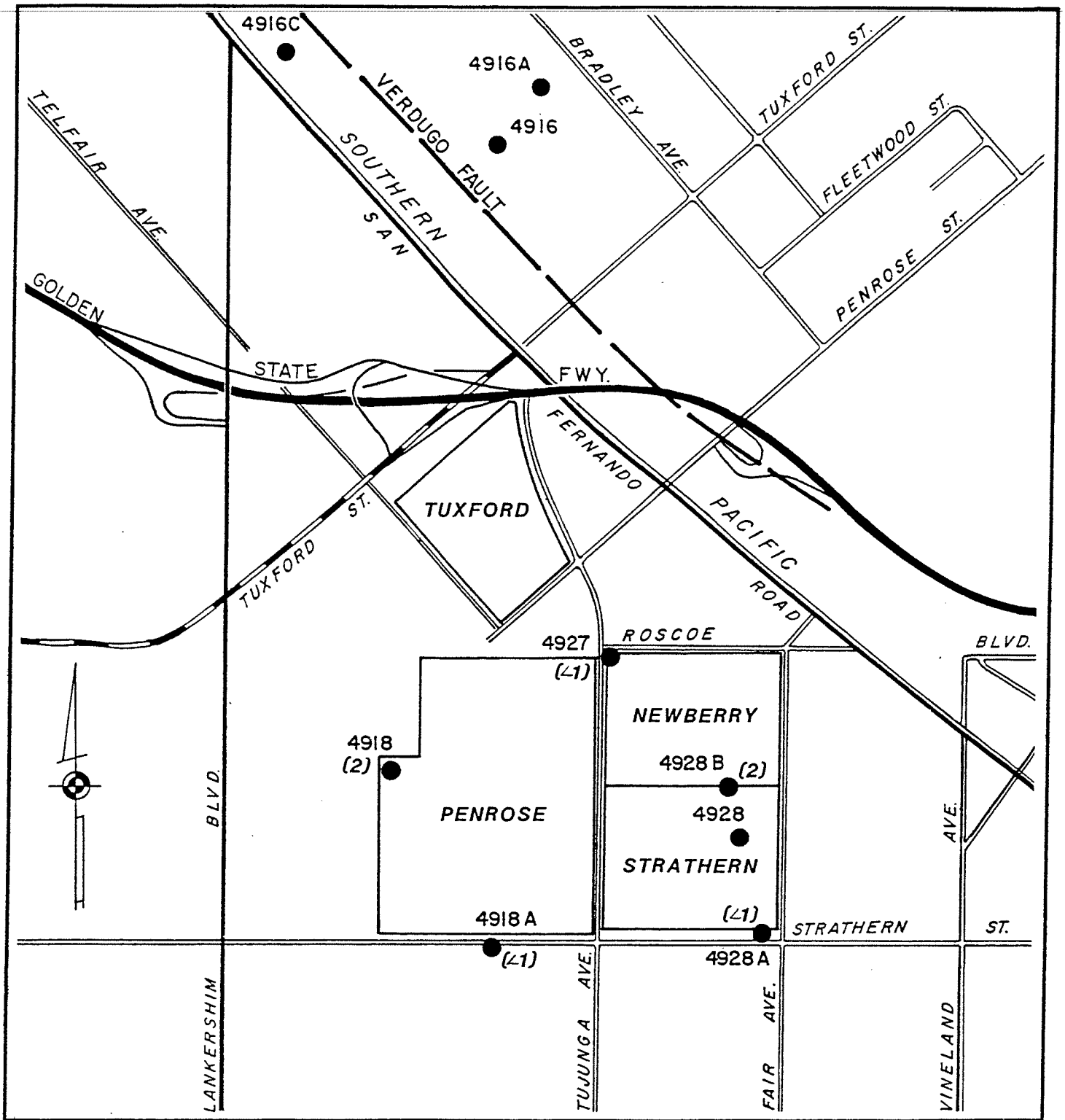

EXPLANATION

4928 ● WELL LOCATION AND NUMBER

(2) PPC in ppb

BASEMAP FROM U.S. GEOLOGICAL SURVEY 7½ MINUTE BURBANK (1972) AND VAN NUYS (1972) QUADRANGLE.

OCTOBER 1987

PCE CONCENTRATION

0 1000 2000

SCALE IN FEET

PLATE 4

LAW ENVIRONMENTAL, INC.

PROJECT No. 58-4003-02 DATE 02-10-88 PROJ. MGR. AC DFTR. MA

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BROWN AND CALDWELL LABORATORIES

373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: P87-10-453

Received: 21 OCT 87
Reported: 09 NOV 87

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Purchase Order: 584003

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-453-1	MW 4918	21 OCT 87
10-453-2	MW 4927	21 OCT 87
10-453-3	MW 4928A	21 OCT 87
10-453-4	MW 4928B	21 OCT 87

PARAMETER	10-453-1	10-453-2	10-453-3	10-453-4
Boron, mg/L	0.25	0.24	0.63	0.25
Phenolics, mg/L	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon (TOC), mg/L	<3	<3	17	<3
Color, APHA U	<3	<3	16	3
Odor, TON 40 C	<1	<1	<1	<1
Turbidity, NTU	0.35	0.40	0.31	1.3
Fluoride, mg/L	0.3	0.3	0.3	0.4
Antimony, mg/L	<0.3	<0.3	<0.3	<0.3
Arsenic, mg/L	<0.01	<0.01	<0.01	<0.01
Barium, mg/L	0.09	0.036	0.18	0.096
Beryllium, mg/L	<0.001	<0.001	<0.001	<0.001
Cadmium, mg/L	<0.02	0.02	<0.02	<0.02
Chromium, mg/L	<0.04	<0.04	<0.04	<0.04
Cobalt, mg/L	<0.04	<0.04	<0.04	<0.04
Lead, mg/L	<0.01	<0.01	<0.01	<0.01
Mercury, mg/L	<0.0008	<0.0008	<0.0008	<0.0008
Molybdenum, mg/L	<0.2	<0.2	<0.2	<0.2
Nickel, mg/L	<0.04	<0.04	<0.04	<0.04
Selenium, mg/L	<0.02	<0.02	<0.02	<0.02
Silver, mg/L	<0.01	<0.01	<0.01	<0.01
Thallium, mg/L	<0.2	<0.2	<0.2	<0.2
Vanadium, mg/L	<0.03	<0.03	<0.03	<0.03

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
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10-453-2	MW 4927	21 OCT 87
10-453-3	MW 4928A	21 OCT 87
10-453-4	MW 4928B	21 OCT 87

PARAMETER	10-453-1	10-453-2	10-453-3	10-453-4
Vol.Pri.Poll. (EPA-624)				
Extraction	11/04/87	11/04/87	11/04/87	11/04/87
Dilution Factor, Times 1	1	1	1	1
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	1	<1
1,1-Dichloroethylene, ug/L	<1	<1	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<1	<1
1,2-Dichloropropane, ug/L	<1	<1	<1	<1
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1
Acrolein, ug/L	<10	<10	<10	<10
Acrylonitrile, ug/L	<10	<10	<10	<10
Bromodichloromethane, ug/L	<1	<1	<1	<1
Bromomethane, ug/L	<1	<1	<1	<1
Benzene, ug/L	<1	<1	<1	<1
Chlorobenzene, ug/L	<1	<1	<1	<1
Carbon Tetrachloride, ug/L	<1	<1	<1	<1
Chloroethane, ug/L	<1	<1	<1	<1
Bromoform, ug/L	<1	<1	<1	<1
Chloroform, ug/L	1	<1	<1	<1
Chloromethane, ug/L	<1	<1	<1	<1
Dibromochloromethane, ug/L	<1	<1	<1	<1

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-453-1	MW 4918	21 OCT 87
10-453-2	MW 4927	21 OCT 87
10-453-3	MW 4928A	21 OCT 87
10-453-4	MW 4928B	21 OCT 87

PARAMETER	10-453-1	10-453-2	10-453-3	10-453-4
Ethylbenzene, ug/L	<1	<1	<1	<1
Methylene Chloride, ug/L	<1	<1	<1	<1
Tetrachloroethylene, ug/L	2	<1	2	<1
Trichloroethylene, ug/L	45	<1	<1	<1
Trichlorofluoromethane, ug/L	<1	<1	<1	<1
Toluene, ug/L	<1	<1	<1	<1
Vinyl Chloride, ug/L	<1	<1	<1	<1
trans-1,2-Dichloroethylene, ug/L	<1	<1	<1	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1
Semi-Quantified Results **				
Acetone, ug/L	---	---	10	---

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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ANALYTICAL REPORT

LOG NO: P87-10-453

Received: 21 OCT 87
Reported: 09 NOV 87

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3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Purchase Order: 584003

REPORT OF ANALYTICAL RESULTS

Log Number : 87-10-453-1
Sample Description: MW 4918

General Mineral Analysis
Sampled Date 21 OCT 87

Anions	mg/L	meq/L
Nitrate (as NO3)	130	2.1
Chloride	34	0.96
Sulfate	57	1.2
Bicarbonate (as HCO3)	320	5.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		9.5

Cations	mg/L	meq/L
Sodium	29	1.3
Potassium	5.7	0.15
Calcium (EDTA Titration)	110	5.5
Magnesium	25	2.1
Total Milliequivalents per Liter		9.1

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	260
Ca Hardness (as CaCO3)	270
Mg Hardness (as CaCO3)	100
Total Hardness (as CaCO3)	370
Iron	0.15
Manganese	<0.005
Copper	<0.02
Zinc	0.13
Surfactants	<0.1
Filterable Residue (TDS)	510
Sp. Conductance, umhos/cm	880
pH, units	7.6

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

LOG NO: P87-10-453

Received: 21 OCT 87
Reported: 09 NOV 87

Alice Campbell
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3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Purchase Order: 584003

REPORT OF ANALYTICAL RESULTS

Log Number : 87-10-453-2
Sample Description: MW 4927

General Mineral Analysis
Sampled Date 21 OCT 87

Anions	mg/L	meq/L
Nitrate (as NO3)	16	0.26
Chloride	20	0.56
Sulfate	61	1.3
Bicarbonate (as HCO3)	260	4.2
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		6.3

Cations	mg/L	meq/L
Sodium	15	0.65
Potassium	2.8	0.072
Calcium (EDTA Titration)	70	3.5
Magnesium	8.5	0.7
Total Milliequivalents per Liter		4.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	210
Ca Hardness (as CaCO3)	170
Mg Hardness (as CaCO3)	35
Total Hardness (as CaCO3)	205
Iron	0.19
Manganese	<0.005
Copper	0.02
Zinc	<0.03
Surfactants	<0.1
Filterable Residue (TDS)	370
Sp. Conductance, umhos/cm	610
pH, units	7.6

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

LOG NO: P87-10-453

Received: 21 OCT 87
Reported: 09 NOV 87

Alice Campbell
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Burbank, CA 91504

Purchase Order: 584003

REPORT OF ANALYTICAL RESULTS

Log Number : 87-10-453-3
Sample Description: MW 4928A

General Mineral Analysis
Sampled Date 21 OCT 87

Anions	mg/L	meq/L
Nitrate (as NO3)	19	0.31
Chloride	83	2.3
Sulfate	56	1.2
Bicarbonate (as HCO3)	590	9.6
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		13.4

Cations	mg/L	meq/L
Sodium	82	3.6
Potassium	8.5	0.22
Calcium (EDTA Titration)	140	7
Magnesium	34	2.8
Total Milliequivalents per Liter		13.6

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	480
Ca Hardness (as CaCO3)	350
Mg Hardness (as CaCO3)	140
Total Hardness (as CaCO3)	490
Iron	0.12
Manganese	0.46
Copper	<0.02
Zinc	0.35
Surfactants	<0.1
Filterable Residue (TDS)	760
Sp. Conductance, umhos/cm	1300
pH, units	7.7

* Conforms to Title 22, California Administrative Code

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ANALYTICAL REPORT

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LOG NO: P87-10-453

Received: 21 OCT 87
Reported: 09 NOV 87

Alice Campbell
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Purchase Order: 584003

REPORT OF ANALYTICAL RESULTS

Log Number : 87-10-453-4
Sample Description: MW 4928B

General Mineral Analysis
Sampled Date 21 OCT 87

Anions	mg/L	meq/L
Nitrate (as NO3)	6.4	0.1
Chloride	21	0.59
Sulfate	50	1
Bicarbonate (as HCO3)	370	6
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		7.7

Cations	mg/L	meq/L
Sodium	35	1.5
Potassium	5	0.13
Calcium (EDTA Titration)	90	4.5
Magnesium	22	1.8
Total Milliequivalents per Liter		7.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	300
Ca Hardness (as CaCO3)	220
Mg Hardness (as CaCO3)	90
Total Hardness (as CaCO3)	310
Iron	0.20
Manganese	1.5
Copper	<0.02
Zinc	<0.03
Surfactants	<0.1
Filterable Residue (TDS)	430
Sp. Conductance, umhos/cm	740
pH, units	7.9

* Conforms to Title 22, California Administrative Code

Robert Peak for
Edward Wilson, Laboratory Director

004334

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373 SOUTH FAIR OAKS AVENUE PASADENA, CA 91105 • (818) 795-7553 • FAX (818) 795-8579

ANALYTICAL REPORT

LOG NO: P87-10-630

Received: 29 OCT 87
Reported: 20 NOV 87

Steve McArdle
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-4003

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-630-1	Well 4918A	29 OCT 87

PARAMETER	10-630-1
Phenolics, mg/L	<0.05
Total Organic Carbon (TOC), mg/L	26
Color, APHA U	6
Odor, TON 40 C	2
Turbidity, NTU	32
Dissolved Digestion, Date	11/02/87
Antimony, mg/L	<0.3
Arsenic, mg/L	<0.01
Barium, mg/L	0.14
Beryllium, mg/L	<0.001
Cadmium, mg/L	<0.02
Chromium, mg/L	<0.04
Cobalt, mg/L	<0.04
Lead, mg/L	<0.01
Mercury, mg/L	<0.0008
Molybdenum, mg/L	<0.2
Nickel, mg/L	<0.04
Selenium, mg/L	<0.02
Silver, mg/L	<0.02
Thallium, mg/L	<0.2
Vanadium, mg/L	<0.03

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BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

LOG NO: P87-10-630

Received: 29 OCT 87
Reported: 20 NOV 87

Steve McArdle
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3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-4003

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-630-1	Well 4918A	29 OCT 87

PARAMETER	10-630-1
Vol.Pri.Poll. (EPA-624)	
Extraction	11/11/87
Dilution Factor, Times 1	1
1,1,1-Trichloroethane, ug/L	<1
1,1,2,2-Tetrachloroethane, ug/L	<1
1,1,2-Trichloroethane, ug/L	<1
1,1-Dichloroethane, ug/L	2
1,1-Dichloroethylene, ug/L	<1
1,2-Dichloroethane, ug/L	18
1,2-Dichloropropane, ug/L	4
1,3-Dichloropropene, ug/L	<1
2-Chloroethylvinylether, ug/L	<1
Acrolein, ug/L	<10
Acrylonitrile, ug/L	<10
Bromodichloromethane, ug/L	<1
Bromomethane, ug/L	<1
Benzene, ug/L	<1
Chlorobenzene, ug/L	16
Carbon Tetrachloride, ug/L	<1
Chloroethane, ug/L	1
Bromoform, ug/L	<1
Chloroform, ug/L	<1
Chloromethane, ug/L	<1
Dibromochloromethane, ug/L	<1
Ethylbenzene, ug/L	<1
Methylene Chloride, ug/L	<1
Tetrachloroethylene, ug/L	<1

004336

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ANALYTICAL REPORT

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Received: 29 OCT 87
Reported: 20 NOV 87

Steve McArdle
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-4003

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
10-630-1	Well 4918A	29 OCT 87

PARAMETER	10-630-1
Trichloroethylene, ug/L	<1
Trichlorofluoromethane, ug/L	<1
Toluene, ug/L	2
Vinyl Chloride, ug/L	<1
trans-1,2-Dichloroethylene, ug/L	91
trans-1,3-Dichloropropene, ug/L	<1
Semi-Quantified Results **	
Acetone, ug/L	20

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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ANALYTICAL REPORT

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Steve McArdle
Law Environmental
3420 N. San Fernando Rd., Suite 200
Burbank, CA 91504

Project: 58-4003

REPORT OF ANALYTICAL RESULTS

Log Number : 87-10-630-1
Sample Description: Well 4918A

General Mineral Analysis
Sampled Date 29 OCT 87

Anions	mg/L	meq/L
Nitrate (as NO3)	0.9	0.015
Chloride	33	0.93
Sulfate	6	0.12
Bicarbonate (as HCO3)	270	4.4
Carbonate (as CO3)	<0.6	<0.02
Total Milliequivalents per Liter		5.5

Cations	mg/L	meq/L
Sodium	52	2.3
Potassium	18	0.46
Calcium (EDTA Titration)	43	2.1
Magnesium	12	0.99
Total Milliequivalents per Liter		5.9

Determination	mg/L
Hydroxide Alk (as CaCO3)	<1
Carbonate Alk (as CaCO3)	<1
Bicarb Alk (as CaCO3)	220
Ca Hardness (as CaCO3)	110
Mg Hardness (as CaCO3)	49
Total Hardness (as CaCO3)	159
Iron	26
Manganese	0.36
Copper	<0.02
Zinc	0.21
Surfactants	<0.1
Filterable Residue (TDS)	320
Sp. Conductance, umhos/cm	550
pH, units	6.5

* Conforms to Title 22, California Administrative Code

Larry L. Shaleger for
Edward Wilson, Laboratory Director

004338