SEMS-RM DOCID # 1166059

California Regional Water Quality Control Board

Los Angeles Region

Peter M. Rooney
Secretary for Environmental Protection

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Pete Wilson
Governor

July 16, 1998

John Ferguson
The Dial Corporation
1850 North Central Avenue
Phoenix, AZ 85077-1713

DIAL CORPORATION, MAIN FACILITY - 9300 RAYO AVENUE, SOUTH GATE - (FILE NO. 95-066)

This is to confirm our verbal approval, as communicated to Mr. Michael Flack of ENSR, to abandon the off-site monitoring wells, MW-4 and MW-5. We have agreed that Dial may abandon MW-4 and MW-5, following the Jervis B. Webb Company obtaining groundwater samples from these wells. Since this work has been completed, we require no further action at this site.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Michael Flack, ENSR

THE **DIAL** CORPORATION

15501 North Dial Boulevard
Scottsdale, AZ 85260-1619
602 754-DIAL

May 6, 1998

Mr. Jim Ross
Unit Chief
Site Cleanup Unit
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Re: The Dial Corporation, Main Facility
9300 Rayo Avenue, South Gate
Your File No. 95-066

Dear Mr. Ross:

This will confirm my conversation today with Ms. Jenny Au concerning the off-site monitoring wells, MW-4 and MW-5 at the South Gate location.

Ms. Au indicated that if The Dial Corporation ("Dial") permits Jervis B. Webb Company ("Jervis Webb") to use these wells to test the groundwater on one occasion, the Water Board will permit Dial to abandon the wells immediately following the test. Based on this commitment, Dial will advise Jervis Webb that it may, under conditions satisfactory to Dial and Jervis Webb, conduct the test.

Upon completion of the test, Dial will abandon the wells.

We appreciate your cooperation in this matter.

Very truly yours,

John Ferguson

John Ferguson
Manager, Product Supply

cc: J. Au - LA-RWQCB
M. Flack, ENSR

W:\AA141.DOC

THE **DIAL** CORPORATION

15501 North Dial Boulevard
Scottsdale, AZ 85260-1619
602 754-DIAL

April 29, 1998

Mr. Jim Ross
Unit Chief
Site Cleanup Unit
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Dear Mr. Ross:

This is in response to your letter of February 26, 1998 Re: **The Dial Corporation, Main Facility - 9300 Rayo Avenue, South Gate File No. 95-066** concerning the retention of the two off-site monitoring wells, MW-4 and MW-5.

We are having difficulty meeting your request that these two wells remain in-place. Specifically, MW-5 is located in property that Dial sold to **East Firestone, LLC** in February 1998. The deed to this small parcel, located across the street from the main parcel, is being held by Dial pending resolution of MW-5 abandonment. The title company wants Dial to complete the deed transfer, but the issue of the well is an impediment to the transfer. Correspondingly, we cannot negotiate with Jervis Webb, or their agents, for the sale of this well because it is located on property that has already been sold to East Firestone, LLC. To resolve this issue, we wish to immediately abandon MW-5 and transfer title to the property to East Firestone, LLC. This will allow Jervis Webb, or their agents, to negotiate directly with the buyer regarding future access and well placement. East Firestone, LLC is aware of the requirement to cooperate with the Water Board, as stated in your No Further Action letter of January 22, 1998.

MW-4 is problematic for Dial for different reasons. The well is located in Rayo Avenue itself, which is owned by the City of South Gate. Insuring the security of this well is impossible now that Dial no longer has a presence in the area. If we were to sell the well to any third party, and inadvertent or deliberate contamination via this pathway were asserted, Dial could incur liability because of its past ownership. This puts an undue burden on Dial in light of the fact that we have completed our voluntary clean-up program. Therefore, Dial desires to immediately abandon MW-4.

Dial went to considerable effort and expense to complete its clean-up of 9300 Rayo Avenue. If Dial had an on-going presence in the City of South Gate, we would be willing to maintain these wells to facilitate the Water Board's current investigation of the ground water. However, since we have sold this property, we believe we should be entitled to abandon our last two wells. This will allow the Water Board to pursue its investigation via the current property owners in this area.

The contact for East Firestone, LLC is Mr. Kenneth Loesch, of Goldrich & Kest, at (310) 280-5087 and (310) 204-1900 (fax).

I look forward to your concurrence with our request to abandon MW-4 and MW-5.

Sincerely,

John Ferguson
Manager, Product Supply

cc: J. Au- LA-RWQCB
M. Flack, ENSR

Cal/EPA

Los Angeles
Regional Water
Quality Control
Board

101 Centre Plaza Drive
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Pete Wilson
Governor

February 26, 1998

John Ferguson
The Dial Corporation
1850 North Central Avenue
Phoenix, AZ 85077-1713

DIAL CORPORATION, MAIN FACILITY - 9300 RAYO AVENUE, SOUTH GATE - (FILE NO. 95-066)

Reference is made to our letter, dated January 22, 1998, which issued a no further action determination for this site. Also, we require that the present and/or future landowners of this property to cooperate with this Water Board by allowing the party responsible for the chlorinated solvents detected in groundwater, access to the site. Water Board staff will work with the present and/or future landowners to find a suitable location for the monitoring wells if needed and will not allow our requirements to hinder any construction or development plans for this site.

The on-site monitoring wells may be abandoned under Los Angeles County Department of Health Services requirements. However, we require that the two off-site monitoring wells, specifically, MW-4 and MW-5, remain in-place. This is due to the fact that we are investigating a potential responsible party for the chlorinated VOCs, and the information from these two wells are pertinent to our findings. Please notify this Water Board at least 72 hours prior to any monitoring wells abandonment activities.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Al Bragg, Los Angeles County Department of Health Services.
Michael Flack, ENSR

Cal/EPA

Los Angeles
Regional Water
Quality Control
Board

101 Centre Plaza Dr.
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Pete Wilson
Governor

January 22, 1998

John Ferguson
The Dial Corporation
1850 North Central Avenue
Phoenix, AZ 85077-1713

DIAL CORPORATION, MAIN FACILITY - 9300 RAYO AVENUE, SOUTH GATE - (FILE NO. 95-066)

We have reviewed the Results of Groundwater Sampling, dated January 6, 1998, for the above mentioned site. On August 6, 1997, we issued a no further action letter for the soil contamination. In addition, we required additional groundwater monitoring data to determine the stability of the chloride and MBAS compounds identified in groundwater.

Based upon the information submitted, we concur with ENSR's findings that the chloride and MBAS concentrations detected in groundwater indicate that the plume is stable. Therefore, we require no further action at this site.

However, since we have determined that there is an off-site source for the chlorinated VOCs detected in the groundwater, it is likely that we will require the party responsible for the source of the groundwater contamination to perform an investigation and cleanup. At that time, we may require the present and future owners of this property to cooperate with this Water Board by allowing access for monitoring well installation and sampling.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.

Hugh Marley
for

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Michael Flack, ENSR
John Lang, Quantum Management Group Inc.

ENSR
Consulting • Engineering • Remediation

1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
FAX (805) 388-3577
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January 6, 1998
Project No. 2277.006.010

Mr. Jim Ross
Unit Chief, Site Cleanup Unit
California Regional Water Quality Control Board-
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

98 JAN -6 AM 10:11

Re: **File 95-066: Dial Corporation, Main Facility, 9300 Rayo Avenue**

Subject: **Results of Groundwater Sampling: Chloride and MBAS**

Dear Mr. Ross:

This letter provides the results of a groundwater sampling program conducted on November 20, 1997, at the former Dial Corporation (Dial) Facility at 9300 Rayo Avenue, South Gate, California (Figure 1). The groundwater sampling program was conducted consistent with a request made by the Regional Water Quality Control Board-Los Angeles Region (RWQCB) during a meeting held on November 10, 1997, at the RWQCB office in Monterey Park. The meeting was held to discuss the Dial letter of October 15, 1997, that expressed concern over the RWQCB request for quarterly groundwater monitoring program at the site for a period of one year.

During the meeting, representatives from Dial, ENSR and the RWQCB discussed rescinding the quarterly groundwater sampling request made by the RWQCB on August 6, 1997, and eliminating benzene, toluene, xylenes and ethylbenzene (BTEX) and chlorinate volatile organic compounds from the listed analytes. The RWQCB indicated during the meeting, that additional data would be needed to assess chloride and methylene blue active substances (MBAS) concentrations identified in groundwater samples collected from onsite wells in February 1997. Chloride and MBAS were reported at concentrations above secondary MCLs in several groundwater samples collected in February 1997. It was agreed at the meeting, that one additional groundwater sampling event would be performed to assess chloride and MBAS concentrations, and if stability in the data was indicated, closure of further groundwater assessment or remediation would be granted by the RWQCB.

ENSR

SAMPLING PROCEDURES

On November 20, 1997, ENSR collected groundwater samples from the eight onsite monitoring wells, MW-1, MW-2, MW-3, MW-6, MW-7, MW-11, MW-12 and MW-13 at the former Dial facility. Ms. Jenny Au of the RWQCB was onsite in the morning to collect split samples from wells MW-2, MW-6 and MW-13. Groundwater sampling and analysis was conducted consistent with the procedures described below.

Prior to collecting a groundwater sample, the depth to water and well depth were measured using an electronic sounder. Using a submersible pump the well was purged a minimum of three casing volumes of water. During pumping, the water was monitored for temperature, pH, and specific conductance to assess if formation water had entered the well. A minimum of three measurements were collected within the calculated purge volume. Most wells were purged to within 5 gallons of their calculated purge volume. Groundwater wells were sampled in the following order: MW-13, MW-2, MW-6, MW-7, MW-11, MW-3, MW-12 and MW-1. A duplicate sample was collected from monitoring well MW-7 as part of the QA/QC program. Field data sheets documenting purging operations are presented in Attachment A.

When the above-described parameters stabilized, the well was allowed to recover to almost static conditions and was sampled. The groundwater sample was collected using a disposable Teflon bailer attached to a braided nylon line. The bailer and line was used once, then disposed of in a 55-gallon DOT drum. The groundwater samples were collected and placed into ½-Liter plastic containers supplied by the State-certified analytical laboratory. The containers were labeled and placed into ice-cooled, insulated containers for transportation to the laboratory, along with appropriate chain-of-custody documentation.

Groundwater samples were analyzed for the following:

Analyte	Method
Chloride	U.S. EPA Method 300.0
MBAS	U.S. EPA Method 425.1

Certified Analytical Laboratory reports and Chain-of-Custody Documentation for the groundwater samples collected on November 20, 1997 are provided in Attachment B.

Equipment that came into contact or that was used to collect the groundwater sample was triple-rinsed with ALCONOX, followed by subsequent rinses with tap and with deionized water. Purge and rinsate were collected in Department of Transportation (DOT) 17-H, 55-

gallon drums placed next to the well head. The purge and rinsate water will be removed to an appropriate disposal facility. Waste manifests for the water will be provided to the RWQCB under separate cover letter.

GROUNDWATER SAMPLING RESULTS

Groundwater beneath the site was measured in the eight wells on November 20, 1997, at depths of between 44.46 and 47.16 feet bgs. The depth to first-encountered groundwater beneath the site has risen approximately 8 feet since monitoring began in April 1992 (Table 1). In general, groundwater has risen slightly in most of the wells since February 1997. The notable exception is the groundwater level in well MW-12 that has raised 3 feet since February 1997. Based on the water level measurements collected in November 1997, a mound is present in the area of well MW-12 causing a local reversal in the regional groundwater and a trough in the middle of the site (Figure 2). This local anomaly in flow direction is contrary to past measurements, where the groundwater flow was to the south-southwest beneath the site and generally parallel to the adjacent Los Angeles River (ENSR, May 1997). The presence of a mound in this area appears to be seasonally related, and could be the result of infiltration of surface water from irrigation or recent precipitation through the cultivated soils due south of the site along the Department of Water and Power Easement (Figure 2). Infiltration of surface water is suggested in this area by the lower chloride and MBAS concentrations reported in groundwater samples from well MW-12 relative to the surrounding wells.

Groundwater samples collected on November 20 contained MBAS and chloride at concentrations similar to those collected in February 1997 (Table-1). Chloride concentrations ranged from 100 to 8,500 mg/L, and were generally lower in groundwater samples collected from wells MW-3, MW-7 and MW-13 (Figure 2). Chloride concentrations were the same or slightly higher in wells MW-1, MW-2, MW-6 and MW-11 and MW-12. The increase in chloride concentrations in the groundwater sample collected from well MW-1, suggest that there is a continuing source of chloride upgradient of the property (Figure 2).

MBAS concentrations ranged from 0.22 to 17 mg/L, and were generally slightly lower or equal to concentrations reported in samples collected in February 1997 (Table-1). The groundwater sample collected from well MW-13 showed the largest increase in concentration, from 4.2 to 10 mg/L (Figure 2). The concentration reported from the sample collected from well MW-13, did not exceed the highest concentration reported from the November and prior sampling events. Groundwater samples collected from wells downgradient of well MW-13 contained MBAS concentrations equal to or lower than

previously reported, suggesting that this result is a local phenomenon contained within the property boundaries.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the groundwater sampling program, the following conclusions are offered:

- Chloride concentrations in groundwater samples collected in November 1997, did not show significant variance to those collected in February 1997. The groundwater sample collected from the well on the northern property boundary showed an increase in chloride concentrations suggesting there is a continuing source upgradient of the site. The distribution of concentrations over a nine-month period suggests that the chloride plume beneath the site is stable and will likely attenuate over time due to natural dispersive mechanisms.
- In general, MBAS concentrations showed less variability than the chloride data: In comparison to data collected in February 1997, MBAS was generally reported at equal to or slightly lower concentrations. The one exception was noted in the sample collected from Well MW-13. Groundwater samples collected from wells downgradient and crossgradient from Well MW-13, contained MBAS concentrations equal to or lower than those previously reported, suggesting that this result is a local phenomenon contained within the property boundaries.

The chloride and MBAS concentrations in groundwater samples collected nine months apart showed little relative variance, suggesting that the plume is stable beneath the site. On the basis of this conclusion, further groundwater sampling is not warranted. Consistent with discussion held on November 10, 1997, and based on these data, ENSR requests that "no further action" be granted for further groundwater investigation or remediation at the Dial Former Main Facility.

ENSR

Should you have any questions regarding these data or the request for closure of further groundwater assessment or remediation, please contact me at your earliest convenience. As you may be aware, negotiations have been initiated with several buyers regarding the property development. As the only remaining issue in the minds of several of the potential buyers is closure of the groundwater investigation, we would appreciate an expedited review of this report and request. Thank you in advance for your attention to this matter and your staffs' cooperation and efforts in review of this project. I look forward to hearing from you at your earliest convenience.

Sincerely,

Michael E. Flack, C.E.G.,
Program Manager

Dave Gerry, C.E.G.,
Principal

Table - 1 Analytical Results for Groundwater Samples Collected on November 20, 1997.
Figure - 1 Site Plan.
Figure - 2 Site Map Showing Chloride and MBAS Historical Chloride and MBAS Data.
Attachment - A Field Data Sheets, November 20, 1997.
Attachment - B Certified Analytical Laboratory Reports and Chain-of-Custody Documentation.

c: John Ferguson, Dial Corporation
John Lang, Quantum Management Group

TABLE 1
ANALYTICAL RESULTS for GROUNDWATER SAMPLES COLLECTED on NOVEMBER 20, 1997
DIAL CORPORATION, 9300 RAYO AVENUE, SOUTH GATE

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	Chloroform (ug/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	TCE (µg/L)	1,2-DCP (µg/L)	Formaldehyde (mg/L)	pH pH Units	Chloride (mg/L)	Ammonia (NH3) (mg/L)	MBAS (mg/L)
MCL				none	1	150	680	1750	100	5	0.5	5	5	5.5	6.5-7.5	500	45	0.5
MW-1	20-Apr-92	51.45	56.24	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
(107.69)	11-Sep-92	52.00	55.69	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA
	19-Mar-93	50.90	56.79	Water level only														
	30-Sep-93	49.95	57.74	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	06-Apr-94	48.39	59.30	<0.5	<0.3	<0.4	<0.5	<0.6	<0.5	<0.4	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
	14-Apr-95	46.08	61.61	<0.04	<0.3	<0.4	<0.5	<0.6	<0.5	<0.4	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
	06-Dec-95	44.80	62.89	<0.04	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	05-Mar-96	44.40	63.29	Water level only														
(109.58)	24-Feb-97	44.97	64.61	<0.05 to 0.5 (5)	<0.5	<1	<1	<2	<0.5	<0.5	<1	<1	<0.5	TR<0.025	7.4	220	1.2	0.14
	20-Nov-97	44.57	65.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	370	NA	ND<0.1
MW-2	20-Apr-92	52.73	52.92	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
(105.65)	11-Sep-92	52.60	53.05	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA
	19-Mar-93	51.17	54.48	Water level only														
	30-Sep-93	49.84	55.81	<0.05	4	0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	06-Apr-94	47.74	57.91	<0.5	2.5	<0.4	<0.5	<0.6	<0.5	<0.4	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
	14-Apr-95	45.50	60.15	<0.04	1.4	<0.4	<0.5	<0.6	<0.5	<0.4	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
	06-Dec-95	44.32	61.33	<0.04	<10*	<10*	<10*	<20*	<0.5	<10*	<10*	<10*	<10*	NA	NA	NA	NA	NA
	05-Mar-96	43.85	61.80	Water level only														
(108.29)	24-Feb-97	45.12	63.17	<0.05 to 0.5 (5)	<0.5	<1	<1	<2	<0.5	<0.5	<1	<1	<0.5	0.13	7.2	700	1.8	22
	20-Nov-97	45.15	63.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	720	NA	17
MW-3	20-Apr-92	53.80	53.44	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	26	<0.5	NA	NA	NA	NA	NA
(107.24)	19-Mar-93	53.83	53.41	Water level only														
	19-Mar-93	52.30	54.94	Water level only														
	30-Sep-93	51.06	56.18	Water level only														
	05-Apr-94	49.15	58.09	Water level only														
	14-Apr-95	47.04	60.20	Water level only														
	06-Dec-95	45.85	61.39	Water level only														
	05-Mar-96	45.44	61.80	Water level only														
(109.06)	25-Feb-97	46.02	63.04	<0.05 to 0.5 (5)	<0.5	<1	<1	<2	<0.5	1.3	<1	3.4	<0.5	0.067	7.1	820	2.4	0.17
	20-Nov-87	45.92	63.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	660	NA	0.27
MW-4	20-Apr-92	52.40	53.99	NA	NA	NA	NA	NA	<0.5	<0.5	0.6	28	<0.5	NA	NA	NA	NA	NA
(106.39)	05-Jun-92	52.59	53.80	Water level only														
	19-Mar-93	51.23	55.16	Water level only														
	30-Sep-93	49.96	56.43	Water level only														
	05-Apr-94	47.95	58.44	Water level only														
	14-Apr-95	45.88	60.51	Water level only														
	06-Dec-95	44.68	61.71	Water level only														
	05-Mar-96	44.21	62.18	Water level only														
(106.39)	24-Feb-97			NO SAMPLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-97			NO SAMPLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	20-Apr-92	56.00	53.71	NA	NA	NA	NA	NA	<0.5	<5*	<5*	1,400	<5*	NA	NA	NA	NA	NA
(109.71)	05-Jun-92	56.21	53.50	Water level only														
	19-Mar-93	54.95	54.76	Water level only														
	30-Sep-93	53.62	56.09	Water level only														
	06-Apr-94	51.68	58.03	Water level only														
	14-Apr-95	49.52	60.19	Water level only														
	06-Dec-95	48.33	61.38	Water level only														
	05-Mar-96	47.78	61.93	Water level only														
(109.71)	24-Feb-97			NO SAMPLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-97			NO SAMPLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	11-Sep-92	53.07	53.81	<0.5	5.8	<5	<5	<5	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA
(106.88)	19-Mar-93	51.80	55.08	Water level only														
	30-Sep-93	50.47	56.41	0.1	48	2	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	06-Apr-94	48.54	58.34	<0.5	53	1.6	0.5	0.7	<0.5	0.7	0.7	<0.4	<0.3	NA	NA	NA	NA	NA
	14-Apr-95	46.33	60.55	0.058	27	1.4	<0.5	<0.6	<0.5	0.5	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
	14-Apr-95	46.33	60.55	0.059	23	1.2	<0.5	<0.6	<0.5	0.5	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA

TABLE 1
ANALYTICAL RESULTS for GROUNDWATER SAMPLES COLLECTED on NOVEMBER 20, 1997
DIAL CORPORATION, 9300 RAYO AVENUE, SOUTH GATE

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	Chloroform (ug/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	TCE (µg/L)	1,2-DCP (µg/L)	Formaldehyde (mg/L)	pH pH Units	Chloride (mg/L)	Ammonia (NH3) (mg/L)	MBAS (mg/L)
MCL				none	1	150	680	1750	100	5	0.5	5	5	5.5	6.5-7.5	500	45	0.5
	06-Dec-95	45.17	61.71	0.11	17	<0.5	<0.5	<1.0	<0.5	0.5	0.6	<0.5	<0.5	NA	NA	NA	NA	NA
	05-Mar-96	44.80	62.08	Water level only														
(107.94)	25-Feb-97	44.48	63.46	<0.05 to 0.5 (5)	1.8	<1	<1	<2	<0.5	0.88	<1	<1	<0.5	0.224	6.7	3200	5.6	1.7
(2/97 Duplicate)	25-Feb-97	44.48	63.46	<0.05 to 0.5 (5)	2.8	<1	<1	<2	<0.5	0.91	<1	<1	<0.5	0.144	7.0	3300	4.8	3.8
	20-Nov-97	44.46	63.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4600	NA	3.6
MW-7	11-Sep-92	53.17	53.84	<0.5	10	5.9	<5	<5	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA
(107.01)	19-Mar-93	52.11	54.90	Water level only														
	30-Sep-93	50.86	56.15	0.3	120	3	2	3	<0.5	1.3	0.6	0.6	2.0	NA	NA	NA	NA	NA
	06-Apr-94(1)	48.70	58.31	0.6	230	5	4.8	3.7	2.3	2.7	1.1	1.8	1.8	NA	NA	NA	NA	NA
	14-Apr-95(2)	46.48	60.53	NA	70	3.9	1.3	2.0	0.4(tr)	2.1	<0.3	1.6	1.4	NA	NA	NA	NA	NA
	06-Dec-95(2)	45.22	61.79	0.33	65	2.7	2	1.9	<0.5	1.7	1.1	0.9	1.2	NA	NA	NA	NA	NA
	05-Mar-96	44.73	62.28	Water level only														
(108.25)	25-Feb-97	44.72	63.54	0.55 (C4-C12)	0.68	<1	<1	2.4	1.7	1.5	<1	<1	<0.5	0.157	6.6	9400	13	0.14
	20-Nov-97	44.60	63.66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300	NA	0.14
(11/97 Duplicate)	20-Nov-97			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8500	NA	0.11
MW-11 (110.43)	25-Feb-97	47.08	63.35	<0.05 to 0.5 (5)	<0.5	<1	<1	<2	<0.5	0.68	<1	<1	<0.5	0.149	7.0	1600	2.3	0.2
	20-Nov-97	46.95	63.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1700	NA	0.22
MW-12 (111.21)	24-Feb-97	47.89	63.32	<0.05 to 0.5 (5)	<0.5	<1	<1	<2	<0.5	3.3	<1	16	<0.5	<0.02	7.5	96	2.2	0.5
	20-Nov-97	44.85	66.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	NA	0.52
MW-13 (110.76)	25-Feb-97	47.23	63.53	<0.05 to 0.5 (5)	0.67	<1	<1	<2	<0.5	3.3	<1	<1	<0.5	<0.03	7.3	1900	2.8	4.2
	20-Nov-97	47.16	63.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1600	NA	10
Trip	14-Apr-95	- -	- -	0.26	<0.3	<0.4	<0.5	<0.6	<0.6	<0.4	<0.3	<0.4	<0.3	NA	NA	NA	NA	NA
Blank	06-Dec-95	- -	- -	<0.04	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	24-Feb-97	- -	- -	NA	<0.5	<1	<1	<2	<0.5	<0.5	<1	<1	0.81	NA	NA	NA	NA	NA
Equip.	06-Dec-95	- -	- -	<0.04	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
Blank	24-Feb-97	- -	- -	NA	<0.5	<1	<1	<2	<0.5	<0.5	<1	<1	<0.5	NA	NA	NA	NA	NA

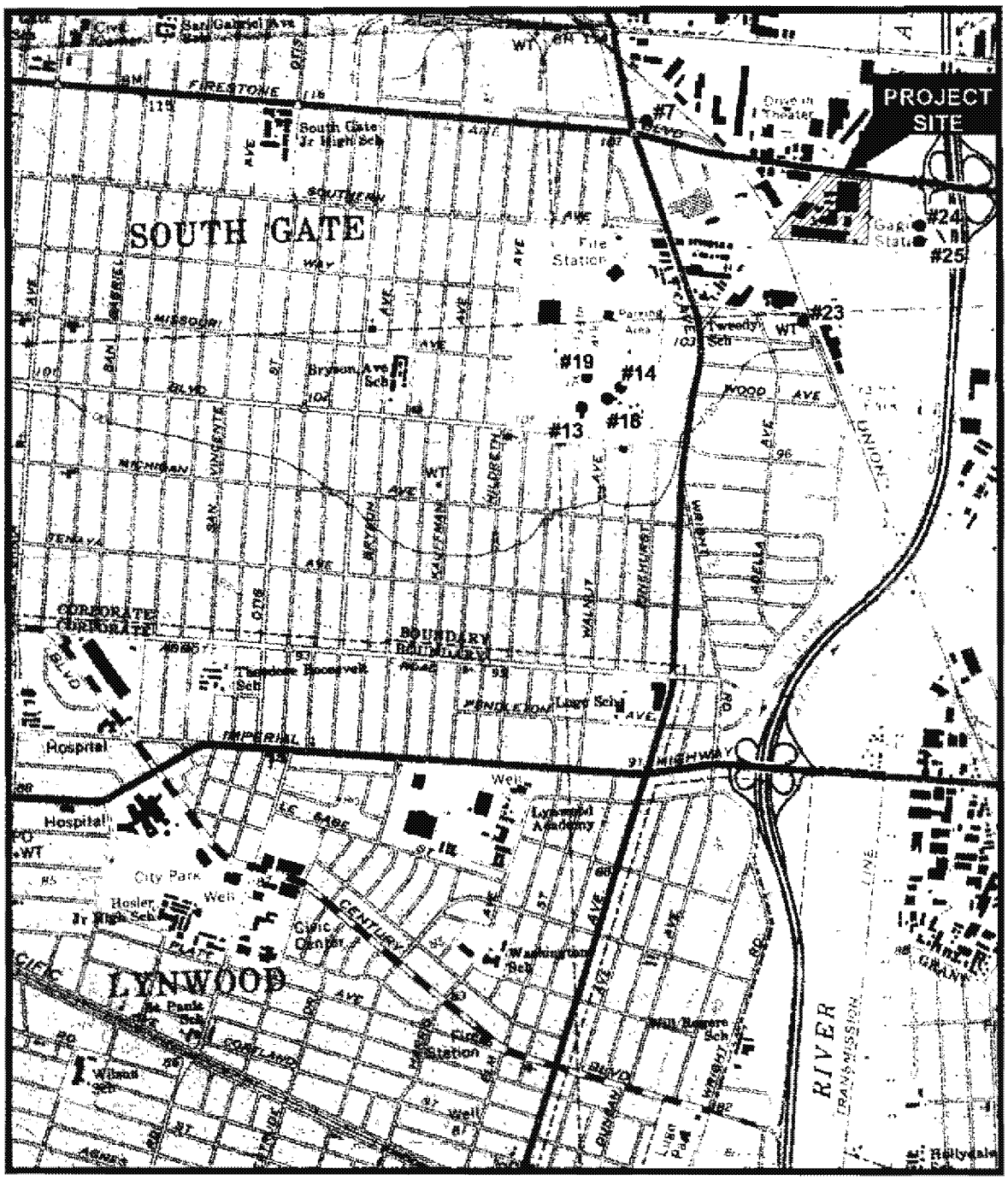
NOTES:

Samples Collected prior to February 24 and 25, 1997 were analyzed by Golden State/CAS Laboratories Inc., Canoga Park, California.
Samples collected onn February 24 and 25, and November 20, 1997 were analyzed by CAPCO Analytical Services, Incorporated, Ventura, California.
MCL = Maximum Contaminant Level (MCL) listed in 22 CCR, Section 64444.5 Table 5 "Maximum Contaminant Levels for Organic Consituents."
The value for Formaldehyde is after the U.S EPA Region IX, Preliminary Remediation Goal for tap water (August, 1996); Secondary Maximum Contaminant Levels are listed in 22 CCR, Section 64473, Table 6 " Consumer Acceptance Limits-Secondary Drinking Water Standards.
Results in bold indicate samples with concentrations over MCLs.

NA = Not analyzed.
- - = Not applicable
* = Method reporting limit elevated because the sample required diluting.
(109.58) = Resurvey of well head elevations after site demolition (2/97).

(1) Other VOCs by EPA Method 8260 detected were cis-1,2-Dichloroethene (1.0 ug/L)
(2) Other VOCs by EPA Method 8260 detected were, cis-1,2-Dichloroethylene (1.0), Acetone (14tr), Isopropylbenzene (0.3tr) and Naphtalene (0.5).
(3) Chloromethane (1.7) was detected in the Method Blank for sampling date 14-Apr-95.
(4) Cis-1,1 dichloroethene (cis 1,1-DCE) was detected in the groundwater sample collected from well MW-7 at a concentration of 1.0ug/L on 12/6/95.
(5) Total Petroleum Hydrocarbon practical quantitation limit range for C4 through C23+ .

CERTIFIED ANALYTICAL LABORATORY REPORTS ARE INCLUDED IN APPENDIX A.



SOURCE: USGS 7.5' Quadrangle, South Gate, California (Photorevised 1981)

●#23 Municipal Supply Wells

NORTH

0 1000 2000

FEET

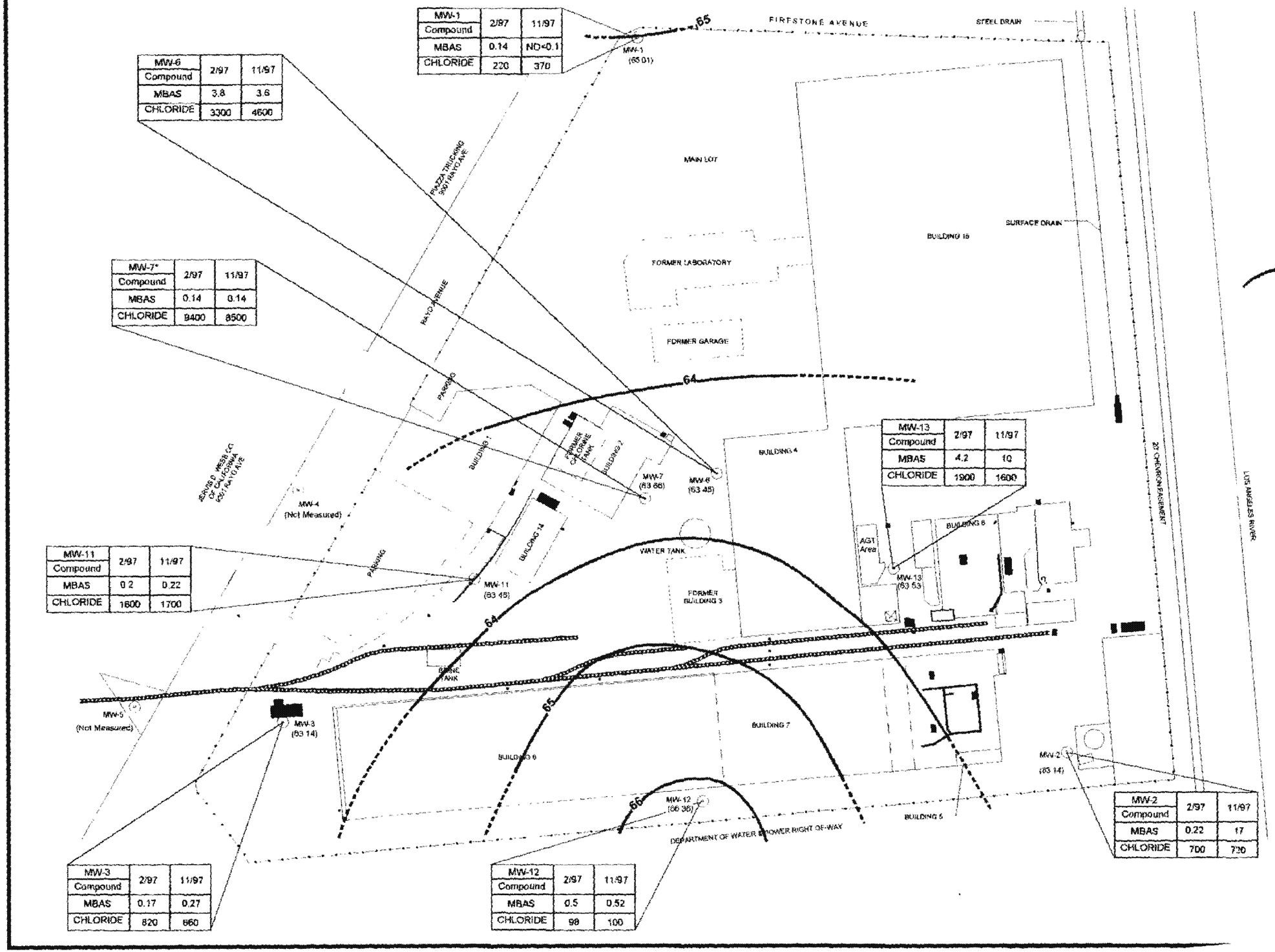
ENSR

FIGURE 1

SITE LOCATION MAP

The Dial Corporation
9300 Rayo Avenue
South Gate, California

Drawn by M. Scop	Date 12/24/94	Project number 2277-006-010
Figure Name 2277006d.dsf	Checked by	



MW-1	2/97	11/97
Compound		
MBAS	0.14	ND<0.1
CHLORIDE	220	370

MW-6	2/97	11/97
Compound		
MBAS	3.8	3.6
CHLORIDE	3300	4600

MW-7*	2/97	11/97
Compound		
MBAS	0.14	0.14
CHLORIDE	9400	8500

MW-11	2/97	11/97
Compound		
MBAS	0.2	0.22
CHLORIDE	1600	1700

MW-3	2/97	11/97
Compound		
MBAS	0.17	0.27
CHLORIDE	820	660

MW-12	2/97	11/97
Compound		
MBAS	0.5	0.52
CHLORIDE	98	100

MW-13	2/97	11/97
Compound		
MBAS	4.2	10
CHLORIDE	1900	1600

MW-2	2/97	11/97
Compound		
MBAS	0.22	17
CHLORIDE	700	720

LEGEND

MW-2 (64.21) Ground Water Monitoring Well Location With Ground Water Elevation Measured November 20, 1997

64 GROUNDWATER ELEVATION CONTOUR IN FEET (MSL); DASHED WHERE APPROXIMATE; QUERIED WHERE INFERRED.

NOTE:

MW-7* DATA REPRESENTS THE HIGHEST CONCENTRATION REPORTED FOR EITHER THE PRIMARY OR DUPLICATE SAMPLE

DATA IS REPORTED IN mg/L

ALL BUILDINGS HAVE BEEN DEMOLISHED AND THE SITE GRADED FLAT. THEY ARE SHOWN ONLY FOR REFERENCE

NORTH

0 100 200
FEET

ENSR

FIGURE 2
SITE MAP SHOWING CHLORIDE AND MBAS DATA, NOVEMBER 20, 1997
The Dial Corporation
9300 Rayo Avenue
South Gate, California

Drawn by M. Scop | Date 1/5/98
Figure Name

ATTACHMENT A

Field Data Sheets, November 20, 1997.

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-1	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Hazy - 70°	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 1600 STOP: 1805	

PURGING DATA

A	Total Depth of Well (ft)	62.00
B	Static Water Level (ft)	14.57
C	Depth of Water Column (ft) (A-B=C)	17.43
D	Volume Multiplier (gal/ft)	.65
E	Casing Volume, One (gal) (C×D=E)	11.33
F	Casing Volume, Three (gal) (3×E=F)	33.99
G	Purge, Time Start (Military)	1655
H	Purge, Time Stop (Military)	1750
I	Total Time of Purge (hrs, min)	0.55
J	Purge Rate (gal)	
K	Actual Purge Volume (gal)	~35
L	Drawdown	
M	Type of Purge Pump	
N	Comments:	

VOLUME MULTIPLIER

Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS

1 Gallon	231 inches^3
1 Foot^3	1728 inches^3 = 7.5 gallons
Area of Circle	πr^2

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	67.9	68.3	67.8	68.3			
Conductivity (micromhos)	3.87	4.35	4.38	4.41			
pH	7.49	7.69	7.77	7.75			
Turbidity	clear	"	"	"			
Salinity	No odor	"	"	"			

SAMPLING DATA

Sample No.	Date	Time (Military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-1	11-20-97	1755	D. Bailer	½L. Plastic Bottle	1		✓	✓				

Depth of Water at Sampling:

Comments: Well pumping better than previous two. 3 full drums sitting next to well! from previous BWM event?

Test Method:
A MBAO
B Chloride
C
D
E
F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-2	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Partly Cloudy	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 730 STOP: 845	

PURGING DATA

A	Total Depth of Well m	73.40
B	Static Water Level m	45.15
C	Depth of Water Column m (A-B=C)	28.25
D	Volume Multiplier (gal/ft)	.65
E	Casing Volume, One (gal) (C×D=E)	18.36
F	Casing Volume, Three (gal) (3×E=F)	~~54.48~~ 55.08
G	Purge, Time Start (military)	740
H	Purge, Time Stop (military)	745
I	Total Time of Purge (hrs, mins)	1.05
J	Purge Rate (gal)	~55
K	Actual Purge Volume (gal)	
L	Drawdown	
M	Type of Purge Pump	
N	Comments:	

VOLUME MULTIPLIER	
Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS	
1 Gallon	231 Inches^3
1 Foot^3	1728 Inches^3 = 7.5 gallons
Area of Circle	πr^2

INDICATOR DATA

Parameter	Before Purge	1st	2nd	3rd			At Sampling
Temperature (C°)	69.1	70.1	10.6	71.1			
Conductivity (mmhos/cm)	5.13	4.57	4.35	4.28			
pH	6.20	7.35	7.40	7.41			
Turbidity	Clear	clear	clear	" "			
Salinity	No odor	slight H2S odor	slight H2S odor	" "			

SAMPLING DATA

Sample No.	Date	Time (military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-2	11-20-97	1050	D. Bailer	1/2 L. Plastic	1	Ice	✓	✓				
~~[illegible]~~				5-HE								

Depth of Water at Sampling:

Comments:

Test Method:
A MBAS
B Chloride
C
D
E
F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-3	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: HAZY WARM 75°	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 1340 STOP: 1535	

PURGING DATA

A	Total Depth of Well (m)	29.70
B	Static Water Level (m)	5.92
C	Depth of Water Column (m) (A-B=C)	23.78
D	Volume Multiplier (gal/m)	.65
E	Casing Volume, One (gal) (C x D = E)	15.46
F	Casing Volume, Three (gal) (3xE=F)	46.38
G	Purge, Time Start (military)	1410
H	Purge, Time Stop (military)	1505
I	Total Time of Purge (hrs, min)	55
J	Purge Rate (gal)	
K	Actual Purge Volume (gal)	~45
L	Drawdown	
M	Type of Purge Pump	

VOLUME MULTIPLIER	
Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS	
1 Gallon	231 Inches^3
1 Foot^3	1728 Inches^3 = 7.5 gallons
Area of Circle	πr^2

N Comments:

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	73.6	70.5	70.7	70.3			
Conductivity (micromhos)	3.80	3.47	3.91	3.91			
pH	7.63	7.71	7.71	7.48			
Turbidity	Clear	Clear	—	—			
Salinity	No Odor	" "	—	—			

SAMPLING DATA

Sample No.	Date	Time (military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-3	11-20-97	1535	D. Bailer	½L. Plastic Bottle	1	TCE	✓	✓				

Depth of Water at Sampling:

Comments:

Test Method

A MBAS

B Chloride

C

D

E

F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-D	DATE: 11-20-97	M T W. ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Hazy 70	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 955 STOP: 1150	

PURGING DATA

A	Total Depth of Well m	71.50		
B	Static Water Level m	44.46		
C	Depth of Water Column m (A-B=C)	27.04	VOLUME MULTIPLIER	
D	Volume Multiplier (gal/m)	.65	Casing Diameter, 2-inch	0.16 gal/ft
E	Casing Volume, One (gal) (C×D=E)	17.56	Casing Diameter, 4-inch	0.65 gal/ft
F	Casing Volume, Three (gal) (3×E=F)	52.7	Casing Diameter, 6-inch	1.46 gal/ft
G	Purge, Time Start (Military)	1005		
H	Purge, Time Stop (Military)	1105		
I	Total Time of Purge (hrs, min)	1.0		
J	Purge Rate (gal)		CONVERSION EQUIVALENTS	
K	Actual Purge Volume (gal)	~50	1 Gallon	231 inches³
L	Drawdown		1 Foot³	1728 inches³ = 7.5 gallons
M	Type of Purge Pump		Area of Circle	m²
N	Comments:			

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	77.7	76.1	78.3	78.9			
Conductivity (micromhos)	14.83	16.68	16.29	15.22			
pH	6.94	7.09	6.99	7.10			
Turbidity	Clear	Slight Cloudy	"	clear			
Salinity	No odor	Slight odor	"	"			

SAMPLING DATA

Sample No.	Date	Time (Military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-6	11-20-97	1145	D. Bailer	1/2L. Plastic			✓	✓				
				Smple								

Depth of Water at Sampling:

Comments:

Test Method

A MBAS

B Chloride

C

D

E

F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-7	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Vial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Hazy-Warm 75°	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 1115 STOP: 1:15	

PURGING DATA

A	Total Depth of Well (m)	68.85	
B	Static Water Level (m)	24.25	
C	Depth of Water Column (m) (A-B=C)	44.60	VOLUME MULTIPLIER
D	Volume Multiplier (gal/m)	.65	Casing Diameter, 2-inch 0.16 gal/ft
E	Casing Volume, One (gal) (C×D=E)	15.756	Casing Diameter, 4-inch 0.65 gal/ft
F	Casing Volume, Three (gal) (3×E=F)	47.28	Casing Diameter, 6-inch 1.48 gal/ft
G	Purge, Time Start (military)	1115	
H	Purge, Time Stop (military)	1245	
I	Total Time of Purge (hrs, min)	1.30	
J	Purge Rate (gal)		CONVERSION EQUIVALENTS
K	Actual Purge Volume (gal)	40	1 Gallon 231 inches³
L	Drawdown		1 Foot³ 1728 inches³ = 7.5 gallons
M	Type of Purge Pump		Area of Circle ft²
N	Comments:		

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	82.3	81.0	78.4				
Conductivity (micromhos)	19+	19+	"				
pH	6.93	6.72	6.80				
Turbidity	Clear	Slight yellow	Clear				
Salinity	No Odor	"	"				

SAMPLING DATA

Sample No.	Date	Time (military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-7	11-20-97	1310	D. Bailer	½L. Plastic	1	Ice	✓	✓				
Dupe	"	"	"	Same	1	Ice	✓	✓				

Depth of Water at Sampling:

Comments: Very slow pump rate
Silt in pump

Test Method
A MBAS
B Chloride
C
D
E
F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-11	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Hazy-Warm 75°	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 1255 STOP: 1425	

PURGING DATA

A	Total Depth of Well (ft)	66.90
B	Static Water Level (ft)	46.95
C	Depth of Water Column (ft) (A-B=C)	19.95
D	Volume Multiplier (gal/ft)	.65
E	Casing Volume, One (gal) (CxD=E)	12.96
F	Casing Volume, Three (gal) (3xE=F)	38.90
G	Purge, Time Start (Military)	1255
H	Purge, Time Stop (Military)	1350
I	Total Time of Purge (hrs, min)	55
J	Purge Rate (gal)	
K	Actual Purge Volume (gal)	~40
L	Drawdown	
M	Type of Purge Pump	
N	Comments:	

VOLUME MULTIPLIER

Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS

1 Gallon	231 inches^3
1 Foot^3	1728 inches^3 = 7.5 gallons
Area of Circle	ft^2

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	79.9	78.7	74.6	74.6			
Conductivity (micromhos)	~~10~~ 10.62	"	10.11	10.63			
pH	7.27	7.24	7.01	6.95			
Turbidity	Silty	Clear	"	"			
Salinity	No odor	"	"	"			

SAMPLING DATA

Sample No.	Date	Time (Military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-11	11-20-97	1425	D. Bailer	1/2 L. Plastic Bottle	1	Ice	✓	✓				

Depth of Water at Sampling: Pumping Very Slow

Comments:

Test Method
A MBAS
B Chloride
C
D
E
F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-12	DATE: 11-20-97	M T W ✓T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: HAZY-Warm 75°	
OBSERVER: JKF-ENSR		OBSERVATION PERIOD: START: 1440 STOP: 1640	

PURGING DATA

A	Total Depth of Well (ft)	65.90
B	Static Water Level (ft)	44.85
C	Depth of Water Column (ft) (A-B=C)	21.05
D	Volume Multiplier (gal/ft)	.65
E	Casing Volume, One (gal) (C×D=E)	41.04
F	Casing Volume, Three (gal) (3×E=F)	13.68
G	Purge, Time Start (Military)	1520
H	Purge, Time Stop (Military)	1620
I	Total Time of Purge (hrs, min)	1.0
J	Purge Rate (gal)	
K	Actual Purge Volume (gal)	~35.00
L	Drawdown	
M	Type of Purge Pump	
N	Comments:	

VOLUME MULTIPLIER	
Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS	
1 Gallon	231 inches^3
1 Foot^3	1728 inches^3 = 7.5 gallons
Area of Circle	πr^2

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	69.6	68.7	68.7	67.8			
Conductivity (micromhos)	2.34	2.56	2.49	2.54			
pH	8.15	7.77	7.91	7.81			
Turbidity	Clear	slight yellow	"	"			
Salinity	No odor	No odor	"	"			

SAMPLING DATA

Sample No.	Date	Time (Military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-12	11-20-97	1630	D. Bailer	1/2 L. Plastic	1	ICE	✓	✓				
				Bottle								

Depth of Water at Sampling:

Comments: Pump is very slow
Silt on pump

Test Method
A MBAD
B Chloride
C
D
E
F

REPORT OF GROUND WATER PURGING/SAMPLING DATA

JOB NO.:	WELL IDENTIFICATION NO.: MW-13	DATE: 11-20-97	M T W ✓ T F S S
CLIENT: Dial		PROJECT: Groundwater Monitoring	
LOCATION: South Gate		WEATHER: Hazy - 70	
OBSERVER: JKF - ENSR		OBSERVATION PERIOD: START: 855 STOP: 945	

PURGING DATA

A	Total Depth of Well (ft)	63.80
B	Static Water Level (ft)	47.16
C	Depth of Water Column (ft) (A-B=C)	16.64
D	Volume Multiplier (gal/ft)	.65
E	Casing Volume, One (gal) (C×D=E)	10.82
F	Casing Volume, Three (gal) (3×E=F)	32.46
G	Purge, Time Start (Military)	900
H	Purge, Time Stop (Military)	935
I	Total Time of Purge (hrs, min)	35
J	Purge Rate (gal)	
K	Actual Purge Volume (gal)	~35
L	Drawdown	
M	Type of Purge Pump	
N	Comments:	

VOLUME MULTIPLIER

Casing Diameter, 2-inch	0.16 gal/ft
Casing Diameter, 4-inch	0.65 gal/ft
Casing Diameter, 6-inch	1.46 gal/ft

CONVERSION EQUIVALENTS

1 Gallon	231 inches^3
1 Foot^3	1728 inches^3 = 7.5 gallons
Area of Circle	ft^2

INDICATOR DATA

Parameter	Before Purge	1	2	3			At Sampling
Temperature (C°)	74.6	74.5	73.5	74.4			
Conductivity (microhms)	12.71	13.43	13.20	12.95			
pH	7.58	7.72	7.67	7.86			
Turbidity	Clear	Slight Yellow	" "	" "			
Salinity	No odor	No odor	" "	" "			

SAMPLING DATA

Sample No.	Date	Time (Military)	Sampling Device	Type of Container	Number of Containers	Preservative	Laboratory Tests A	B	C	D	E	F
MW-13	11-20-97	1022	D. Bailer	1/2 L. Plastic Bottle	1	ICE	✓	✓				

Depth of Water at Sampling:

Comments:

Test Method
A MBAS
B Chloride
C
D
E
F

F-GW0701 07 '93

APPENDIX B

Certified Analytical Laboratory Reports and Chain-of-Custody Documentation

Capco Analytical Services Incorporated (CAS)
1536 Eastman Avenue, Suite B
Ventura, CA. 93003
(805) 644-1095

Prepared For: ENSR
1220 Avenida Acaso
Camarillo, CA 93012

November 26, 1997

ATTENTION: Mike Flack

Laboratory No: 971929
Date Received: 21-NOV-97
Project: Dial Groundwater Monitoring

Job No: B03775
Sampled By: Client
Sample ID: See Below

RESULTS

On November 21, 1997, nine (9) samples were received for analysis by Capco Analytical Services Inc. The samples were identified and assigned the lab numbers listed below. This report consists of 2 pages excluding the cover letter and the Chain of Custody.

SAMPLE DESCRIPTION	CAS LAB NUMBER
MW-1	97192901
MW-2	97192902
MW-3	97192903
MW-6	97192904
MW-7	97192905
MW-11	97192906
MW-12	97192907
MW-13	97192908
DUPLICATE	97192909

Dan A. Farah, Ph.D.
Director - Analytical Operations

This report shall not be reproduced except in full without the written approval of Capco Analytical Services Inc.
The test results reported represent only the items being tested and may not represent the entire material from which the sample was taken.

CAPCO Analytical Services, Inc.

Capco Analytical Services INC. (CAS)
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: ENSR
Lab ID: 971929
Date Received: 11/21/97
Date Analyzed: 11/21/97

Sample Matrix: Wet Extract
Date Sampled: 11/20/97
Analyst: DK

MBAS SURFACTANTS
EPA Method 425.1

CAS Lab #	Sample ID	RESULTS MBAS (mg/L)	Dil Factor	PQL (mg/L)
97192901	MW-1	BQL	1.00	0.1
97192902	MW-2	17	10.00	1
97192903	MW-3	0.27	1.00	0.1
97192904	MW-6	3.6	2.00	0.2
97192905	MW-7	0.14	1.00	0.1
97192906	MW-11	0.22	1.00	0.1
97192907	MW-12	0.52	1.00	0.1
97192908	MW-13	10	5.00	0.5
97192909	Dupe	0.11	1.00	0.1
971929-MB	Method Blank	BQL	1.00	0.1

PQL: Practical Quantitation Limit
BQL: Below Practical Quantitation Limit

D. Klar
Principal Analyst

CAPCO Analytical Services, Inc.

Capco Analytical Services INC. (CAS)
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: ENSR
CAS Lab No: 971929
Date Received: 11/21/97
Date Analyzed: 11/24/97

Sample Matrix: Water
Date Sampled: 11/20/97
Analyst: DK

CHLORIDE ANALYSIS
EPA Method: 300.0

CAS Lab #	Sample ID	RESULTS Chloride (mg/L)	Dil Factor	PQL (mg/L)
97192901	MW-1	370	40.00	40
97192902	MW-2	720	40.00	40
97192903	MW-3	660	40.00	40
97192904	MW-6	4600	400.0	400
97192905	MW-7	8300	400.0	400
97192906	MW-11	1700	400.0	400
97192907	MW-12	100	40.00	40
97192908	MW-13	1600	80.00	80
97192909	Dupe	8500	400.0	400
971929-MB	Method Blank	BQL	1.00	1

PQL: Practical Quantitation Limit
BQL: Below Practical Quantitation Limit

D. Klein
Principal Analyst

CAPCO Analytical Services, Inc.

M901376

ENSR

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client/Project Name: Dial - Groundwater Monitoring	Project Location: Southgate, CA
Project Number:	Field Logbook No.:
Sampler (Print Name)/Affiliation: Jim Fickerson ENSR	Chain of Custody Tape No.:
Signature: [signature]	Send Results/Report to: Mike Flack ENSR, Camarillo

Analysis Requested: MBAS, Chloride

Normal Turn Around Time

971929-

	Field Sample No./Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	MBAS	Chloride					Lab I.D	Remarks
1	MW-1	11-20-97	1755	✓		1/2 Liter Plastic Bottle	Water	Ice		✓	✓						
2	MW-2	↓	1050	↓		↓	↓	↓		✓	✓						
3	MW-3	↓	1535	↓		↓	↓	↓		✓	✓						
4	MW-6	↓	1145	↓		↓	↓	↓		✓	✓						
5	MW-7	↓	1310	↓		↓	↓	↓		✓	✓						
6	MW-11	↓	1425	↓		↓	↓	↓		✓	✓						
7	MW-12	↓	1630	↓		↓	↓	↓		✓	✓						
8	MW-13	↓	1022	↓		↓	↓	↓		✓	✓						
	Dupe	↓	\	↓		↓	↓	↓		✓	✓						

Relinquished by: (Print Name) Jim Fickerson	Date 11-21-97	Received by: (Print Name) M. O'DONNELL	Date:
Signature: [signature]	Time: 1800	Signature: M. O'Donnell	Time:
Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature:	Time:	Signature:	Time:
Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature:	Time:	Signature:	Time:

Analytical Laboratory (Destination): Capco Analytical Ventura, CA

Serial No. 4859

California State Department of Health Services
Division of Drinkin Vater and Environmental Mana ıent—SRL (South)

Analysis Request Form

Name of Sampler: JENNY AU

Phone No: (213) 266 7576

( ) _____

Sampler employed by: ☐ ODW

R.W.Q.C. Board No: ☒ 4 ☐ 7 ☐ 8

Sample source: DIAL - So. Gate

Date collected: 11/20/97 Analysis Task No. _____

Sample Type: ☐ Drinking Water : ☒ Ground water ☐ Surface water
☐ Waste water : Chlorinated ☐ Yes ☐ No
☐ Solid sample : ☐ Soil ☐ Sludge ☐ Sediment
☐ Other _____

Use your own bottle ID number for each bottle.

For Lab Use Log Number	Bottle ID No.	Sampling Point	Time Collected	Type of Analysis Required (Be specific)
711 ~~42~~ 1142	MW-2		10:50	MBAS
711 1143	MW-6		11:45	Chloride
711 1144	MW-3		10:22	MBAS

Warning or special instruction on samples:

Seals: ☐ Intact ☐ None ☐ Broken		Date	Time
Samples relinquished by	[signature]	11/20/97	3:30 pm.
Samples relinquished by			
Received for Lab by	C. Bernardo	11/20/97	3:30

State of Cal: ornia - Department of Heal . Services
Division of Drinking Water & Environmental Management
Sanitation & Radiation Laboratory - South
Analytical Report

DATE REPORTED: 12/11/97

DATE RECEIVED: 11/20/97 SAMPLER: Jenny Au

Lab ID. Number	CONSTITUENT	EPA METHOD	STORET CODE	UNITS	ANALYSIS RESULTS	REPORTING LIMIT
711-1142	MBAS	425.1	38260	mg/L	6.1	0.025
711-1143	Chloride (Cl)	325.3	940	mg/L	4070	1
711-1144	MBAS	425.1	38260	mg/L	8.4	0.025

N.D. = None detected.
mg/L = Milligram/Litre (ppm) mcg/L = Microgram/Litre (ppb)
mg/Kg = Milligram/Kilogram (ppm) mcg/Kg = Microgram/Kilogram (ppb)

THE **DIAL** CORPORATION

15501 North Dial Boulevard
Scottsdale, AZ 85260-1619
602 754-DIAL

October 15, 1997

Mr. Jim Ross
Unit Chief
Site Cleanup Unit
Los Angeles Regional Water Quality Control Board (RWQCB)
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Dear Mr. Ross:

The Dial Corporation has been working under a voluntary cleanup contract with the RWQCB Site Cleanup staff since 1995 to address environmental conditions at our site located at **9300 Rayo Avenue, South Gate, CA (File 95-066)**. I believe that Dial and the RWQCB staff have accomplished a great deal, in that the soils have reached "no further action" status.

The reason for this letter is my concern over the RWQCB's recent request for ground water monitoring for chloride, MBAS, BTEX and VOC's for a period of one year. To help me better understand the technical issues for ground water, I asked our consultant, ENSR, to summarize the current data at the site. I attached their response for your review.

In light of ENSR's information, I would like to meet with you and your staff so that I will better understand the RWQCB's position on ground water monitoring. I suggest the week of November 3.

Dial maintains its commitment to address the environmental conditions at our site. Let me know when you are available to meet. Should you have any questions, please contact me at (602) 754-5198.

Sincerely,

John Ferguson
Manager, Product Supply

enclosure: ENSR Letter, October 13, 1997

cc: Michael Cavanaugh, The Dial Corporation
Michael Flack, ENSR
John Lang, Quantum Management Group

ENSR

MEMORANDUM

TO:	John Ferguson, The Dial Corporation	**DATE:**	October 13, 1997
FROM:	Michael Flack	**FILE:**	2277006.010
RE:	DIAL, South Gate, Main Facility	**CC:**	John Lang, Quantum Management Group

Per your request, I have outlined a response to the Regional Water Quality Control Board's (RWQCB August 6, 1997) request for additional quarterly groundwater sampling at the former Dial Main Facility in South Gate, California. The RWQCB has requested that ten (10) wells be monitored on a quarterly groundwater basis for BTEX, VOCs, chloride and MBAS for a period of one year to develop an identifiable trend in the monitoring data. I believe the request for monitoring of 10 wells maybe in error given there are only 8 wells on site. Additionally, during the July 10, 1997, meeting when the issue of quarterly sampling was discussed at length, the RWQCB agreed that only 6 onsite wells would be need to be sampled on a quarterly basis.

As stated in their letter of August 6, 1997, and during the July 10, 1997 meeting, the RWQCB maintains that there is not enough data to derive a trend in the BTEX, VOCs, chloride and MBAS data from which to establish closure of the groundwater. Groundwater sampling has been conducted since 1992, for VOCs and BTEX in wells located on the site. Sampling for MBAS and chloride was conducted in February 1997, as part of the closure program.

The outline provided below summarizes the arguments for **not** collecting and analyzing groundwater samples on a quarterly basis for BTEX, VOCs, MBAS and chlorides (collectively constituents of concern; [COCs]) from the onsite monitoring wells. In addition, general points regarding the local hydrogeology and production well proximity are provided to support the position that no further groundwater sampling appears warranted for the COCs. In general, most of this was discussed in our meeting of July 10, 1997 with the RWQCB and has been provided in the May, 1997 Closure Report and previous submittals.

General

- Groundwater beneath the site is contained within the "Semiperched" Aquifer, not a productive unit within the Central Groundwater Basin of Los Angeles County;

- Productive aquifers (Silverado) are located below 280 feet below the groundsurface (bgs); groundwater beneath the site is present at depths below 45 feet bgs;

- The nearest groundwater production well is located approximately 700 feet downgradient of the former main facility property; This well in screened below 580 feet bgs; the well seal however, was only completed to a depth of 50 feet bgs (gravel pack from 50 to 890 feet bgs), although significant migration of COCs vertically down the well gravel pack is not likely, given the aquifer is confined and there is a upward vertical gradient;

- An estimate of seepage velocity yields 0.34 f/d; assuming 700 feet of travel yields an estimate of 5.8 years for "impacted" groundwater to reach the nearby well. This estimate does not include major retardation effects from sorption, bioattenuation or diffusion, which would further limit transport of organic constituents through the groundwater.

- As documented during the "South Parking Lot" assessment program, the shallow groundwater has been "regionally-impacted" by VOCs from a source other than the Dial Facility;

BTEX

- Historic data (1992) shows declining concentrations in the groundwater consistent with source removal (SVE); There is no dynamic (continued source) which will change this trend;

- One well (MW-6) located in the center of the property contained benzene at concentrations above State of California Drinking Water Maximum Contaminant Levels (MCLs); No other petroleum aromatic compounds (BTEX) were reported in groundwater samples collected during the February,1997, sampling effort at concentrations above MCLs; This is consistent with historical data (since 1992), that has shown that BTEX concentrations above MCLs are found in the central portion of the site and have been in general decline.

- From the groundwater monitoring data gathered since 1992, there appears to be sufficient information from which to derive a trend in the BTEX in the shallow aquifer beneath the site.

VOCs

- One well (MW-12) contained a TCE concentration above State MCLs (TCE);

- VOC distribution is consistent with an offsite source;

- The source of VOCs identified prior to site closure in the soil (1,2 DCA and chloroform) was removed during the SVE program; although chloroform was detected in the area of former building 2/14 clarifer (to depths of 25 feet bgs), historically and in wells downgradient of this location, chloroform has not been reported above laboratory practical quantitiation limits;

- TCE, 1,1 DCA and Freon 12 detected in three soil samples collected during the closure program are anomalous. These VOCs were reported in soil samples collected below 25 feet bgs; this limited distribution below 25 feet bgs suggests that they could be residual compounds from a "smear" zone when the groundwater level was higher.

MBAS

- Three out of eight wells contained MBAS at concentrations above Secondary MCLs (taste and odor);
- The upgradient well contained MBAS (0.14 mg/L) suggesting a regional problem exists; this conditions is not unexpected given the proximity to the Los Angeles River and the industrial businesses north of the site;
- MBAS (surfactants) will likely biodegrade over time; this is suggested by the relatively low concentrations in the groundwater as compared to soil data and site history where soap production lasted for over 50 years;
- Source removal (tanks, soil, clarifiers etc...) will further aid in the attenuation of these compounds;

CHLORIDE

- Though concentrations were reported above secondary MCLs in the majority of groundwater samples collected, significantly elevated concentrations of chloride are located in the central portion of the property;
- Historical usage (since the late 1930's) would suggest a more extensive and offsite plume, if there were a significant mass introduced to the shallow aquifer; plume configuration indicates relative stability in the chloride concentrations;
- Upgradient and downgradient wells contain low concentrations of chloride further suggesting plume stability;
- Source removal will further aid in plume attenuation; chloride will be affected by advection and dispersion only and transport through the groundwater would closely approximate the seepage velocity estimates. The estimate of transport does not consider the effects of dispersion, and that it is apparent from the concentrations reported beneath the site the plume has not migrated appreciably downgradient.
- The receptor for chloride-impacted groundwater is located 700 feet downgradient of the site; the well is screened well below the "Semiperched" aquifer.

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

August 6, 1997

John Ferguson
The Dial Corporation
1850 North Central Avenue
Phoenix, AZ 85077-1713

DIAL CORPORATION, MAIN FACILITY - 9300 RAYO AVENUE, SOUTH GATE - (FILE NO. 95-066)

We have reviewed the Final Closure Report, dated May 1997, and the Final Dodecylbenzene Health Risk Assessment Addendum, dated July 8, 1997, for the above mentioned site. In addition, a meeting was held on July 10, 1997, between Dial's representatives and Regional Board staff.

The site is a former soap and bleach manufacturing facility. Subsurface investigations at the site identified petroleum hydrocarbons, volatile organic compounds, and inorganic compounds in the soil and groundwater at the site. The sources of contamination at the site include clarifiers, sumps, drains, aboveground tanks, and underground storage tanks.

Subsequently, ENSR implemented a closure program to investigate and remove all the structures. Impacted soils were excavated and disposed off-site. A soil vapor extraction system (VES) was installed and operated from January through December 1995 to remediate petroleum and VOC-impacted soil in the old garage and laboratory area. In addition, a health risk assessment (HRA) was performed for dodecylbenzene impacted soils.

Confirmation soil samples indicate that the majority of contaminated soils have been remediated to site screening levels, established using RWQCB Guidance. The results of the HRA indicate that the risks associated with dodecylbenzene impacted soils at this site are below levels of concern. Therefore, no further soil assessment and remediation will be required soil at this site.

However, groundwater samples collected from ten on-site groundwater monitoring wells indicate that the groundwater has been impacted with low levels of BTEX and VOCs, chloride, and MBAS. Since the sources of contamination have been removed from the site, we require the groundwater contamination be monitored on a quarterly basis for at least one year or until a trend can be identified.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Michael Flack, ENSR
John Lang, Quantum Management Group Inc.

Cal/EPA

Los Angeles Regional Water Quality Control Board

101 Center Plaza Drive
Monterey Park, CA
91754-2156
(213) 266-7500
FAX (213) 266-7600

Pete Wilson
Governor

JULY 10, 1997, 1:30PM MEETING

DIAL CORPORATION - SOUTHGATE

NAME	ORGANIZATION	PHONE NUMBER
Jenny Au	RWQCB	213 266 7576
Mark Stelljes	SECOR	510 686 9780
JOHN LANG	(REPRESENTING DIAL) QUANTUM MGMT. GROUP	
MIKE FLACK	ENSR REP. DIAL	805.388.3775
Rebecca Chun	RWQCB	213-266-7607
YUE RONG	"	213 266-7604

SITE CLOSURE
DIAL CORPORATION
9300 RAYO AVENUE

MEETING OBJECTIVE: Resolve remaining soil and groundwater issues that may hinder issuance of a "No Further Action" Letter for the subject property.

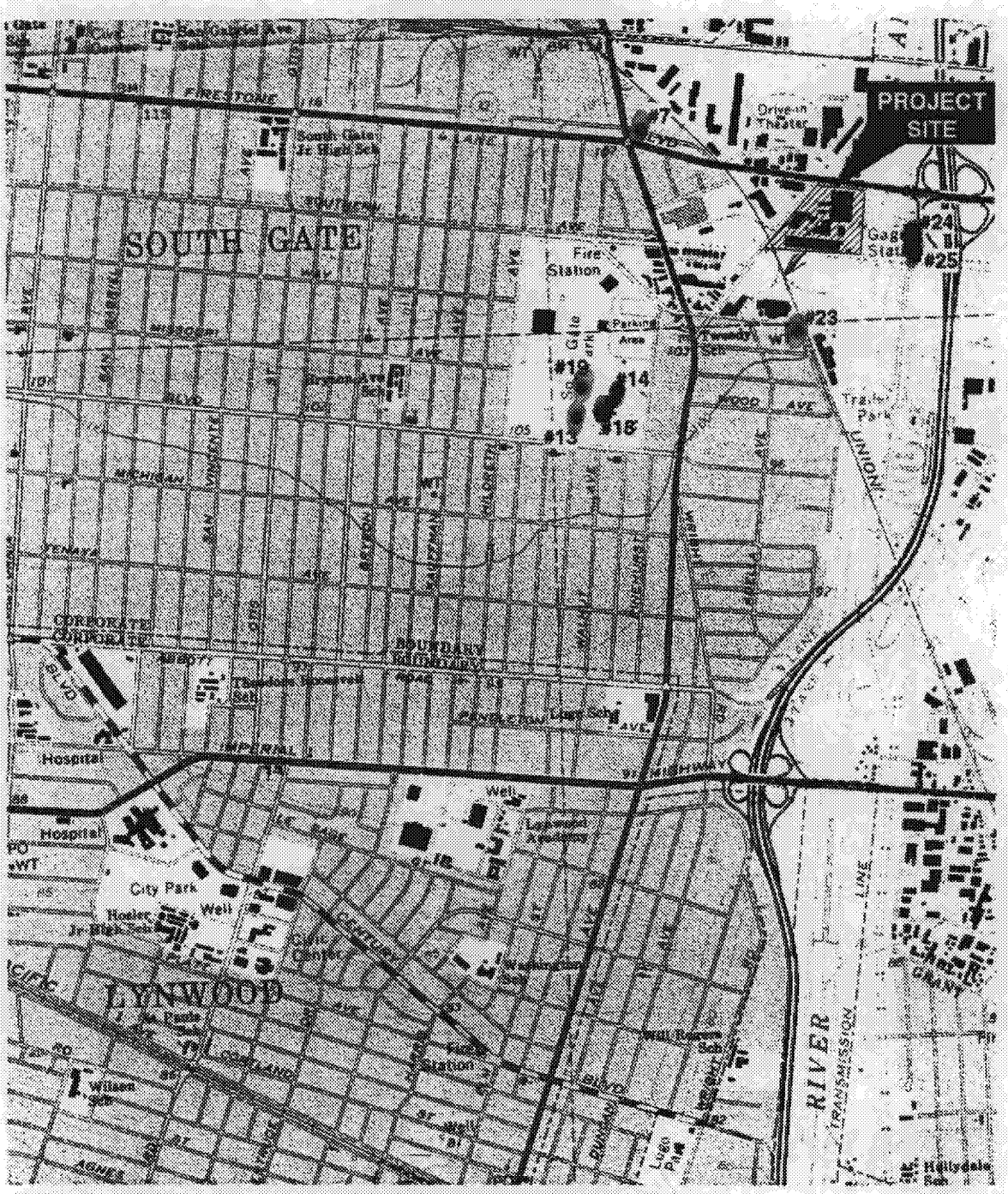
Dodecylbenzene Risk Assessment Addendum

- Background, Initial Risk Assessment Performed in January,1994 Dodecylbenzene.
  Lack of toxicity
- Quantitative Structure Activity Approach and Addendum (July, 1996) ① Alkalyte ② toxicity value
- QSAR Results and RWQCB Concerns/Comments (April, 1997) ③ Ethylbenzene
- Results of Ethylbenzene Surrogate Modeling
  less conservative. vapor pressure.
- Sensitivity Analysis: Effects on Model results using site specific inputs.

Groundwater

- Remaining concerns over MBAS, Chloride and Formaldehyde
- Plume site geometry and apparent stability
- Proximal wells (City of South Gate Municipal Supply); nearest well 700 feet downgradient, screened below 580 feet/ filter pack below 50 feet.
- Wells constructed in Silverado Aquifer at depths below 280 feet bgs; many shutdown due to PCE impacts
- An estimate of seepage velocity yields 0.34 f/d (sandy aquifer); Assuming 700 feet of travel yields an estimate of 5.6 years for impacted water to reach nearby well. Estimate does not include major retardation effects from sorption or biodegradation or from diffusion.

April 1997
Project No. 2277.006



SOURCE: USGS 7.5' Quadrangle, South Gate, California (Photorevised 1981)

●#23 Municipal Supply Wells

NORTH

0 1000 2000

FEET

SITE LOCATION MAP
THE DIAL CORPORATION
Main Facility
9300 Rayo Avenue
South Gate, California

FIGURE 1

9648/3411/ocm dsd

MEMORANDUM

TO: John Ferguson, Dial Corp.

DATE: May 2, 1996
PROJECT: 20H93-001.007

FROM: Mike Flack, EMCON

RE: City of South Gate Municipal Supply Wells Located near the Dial Corp. Main Facility and the South Parking Lot sites.

EMCON conducted a review of groundwater quality data that has been collected by the City of South Gate from municipal supply wells located in the vicinity of the Dial Corp. (Dial) Main Facility and South Parking Lot sites (see attached Figure 1). The closest well, City of South Gate Well #23 (State Well No. 3S/12W-06/03) is located approximately 1,000 feet south and downgradient of the Dial Corp. Main Facility and South Parking Lot (see Drawing 1 and Figure 1). This well was installed in 1952 to a total depth of 856 feet below the ground surface (bgs) and is perforated below 530 feet bgs in the Silverado Aquifer. The well was not installed with a filter pack and reportedly the seal only extends to a depth of 50 feet bgs. The construction of this well could allow volatile contaminants, such as PCE or TCE with specific gravities greater than one, to migrate vertically along the well bore an thus provide a conduit to deeper aquifers. However, because of the distance of the well from the Dial facility and the depth of the well screen, it is unlikely that the low concentrations of VOCs reported in the perched layer below the Dial site would migrate 1,000 feet horizontally and then vertically, 500 feet along the well bore.

Well construction details for two nearby wells due east of the Main Facility, City of South Gate Wells #24 and #25, indicate that they are perforated at 280 feet bgs and have filter packs that extend from the ground surface to their total depths in the Silverado Aquifer. Tracer studies conducted by the City of South Gate to determine if the annular space of these wells were acting as conduits for the migration of contaminants into the Silverado Aquifer were inconclusive. There were no records of tracer tests for South Gate well #23.

In 1987, the City of South Gate closed municipal supply wells 7, 13, 14, 18, 19, 22B, and 25 due to PCE contamination (see attached Figures 4-6, 4-7, and 4-8 from the Listing Site Inspection Report prepared by Ecology and Environment for EPA and the Cooper Drum Facility). Each of these wells is located within 1-mile of the Dial Corp. property. Recent groundwater samples, collected on February 12, 1996, from some of these wells contained low PCE concentrations (up to 1.6 microgram per liter [µg/l] in Well #25). In downgradient Well #23, PCE and other Volatile Organic Compounds were not reported above the method reporting limits (see attached Drawing 1). The highest historical concentrations of PCE have been reported in wells in South Gate Park (Wells #13, #14, #18, and #19), southwest of the Cooper Drum Facility.

Based on our review of historical and recent analytical data, the low levels of PCE detected in municipal wells situated upgradient and downgradient from the Dial properties reflect area-wide groundwater impacts to deep aquifers in the Los Angeles Basin Contaminants reported in these municipal supply wells are not found on the Dial properties and are apparently from several offsite sources. VOCs detected in soils in the vicinity of the Old Lab and Maintenance Shop and reported in groundwater samples (benzene, 1,2-DCA, chloroform) collected from monitoring wells central to the Dial Main Facility have not been reported in Well #23. Given the low concentrations and distance, it is highly unlikely that these VOCs reported in the shallow groundwater below the Dial Main Facility would be present in the vicinity of South Gate well #23.

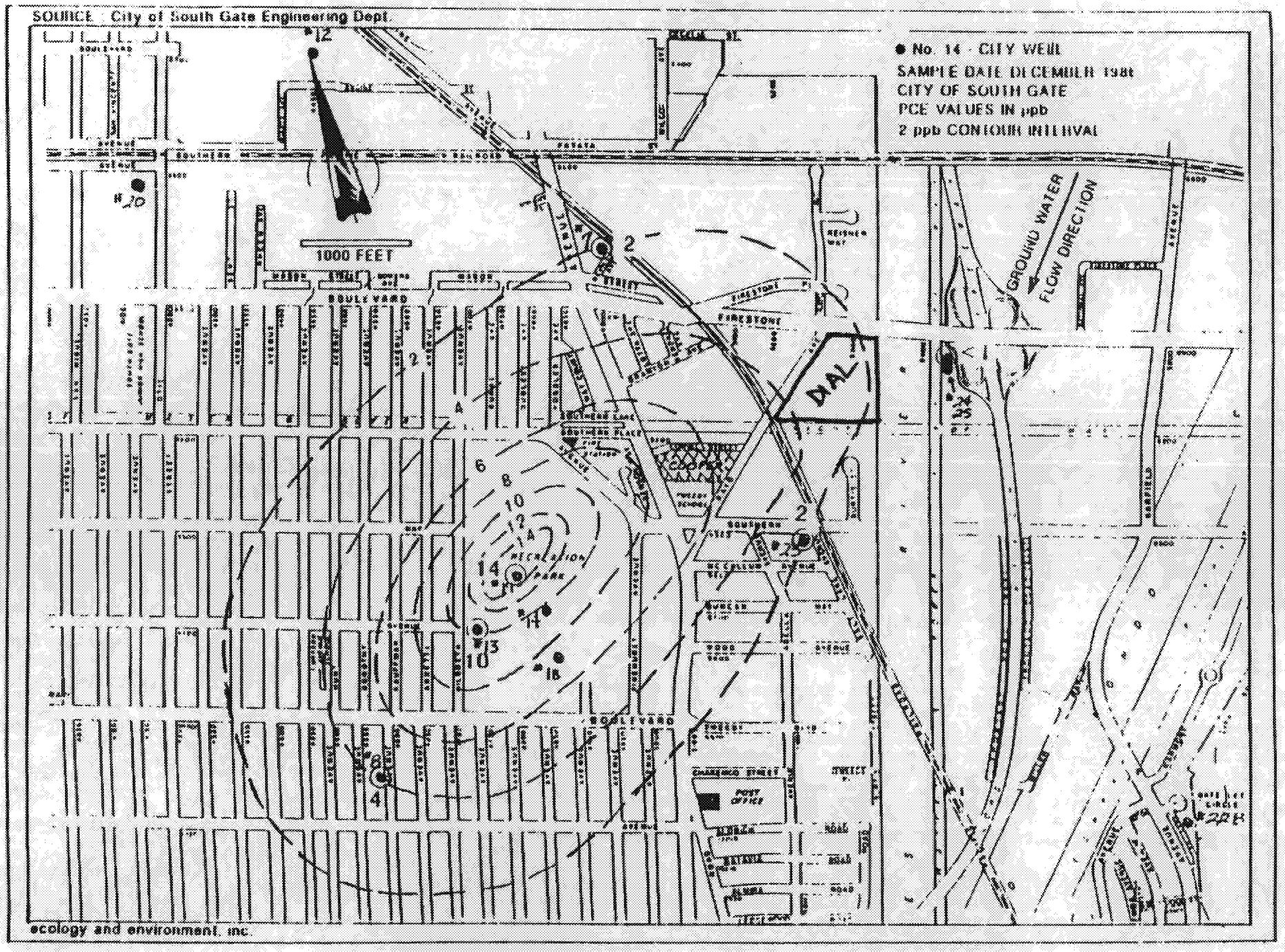


Figure 4-6 CONTOUR OF PCE VALUES IN VICINITY OF COOPER DRUM DECEMBER 1986 SAMPLING EVENT

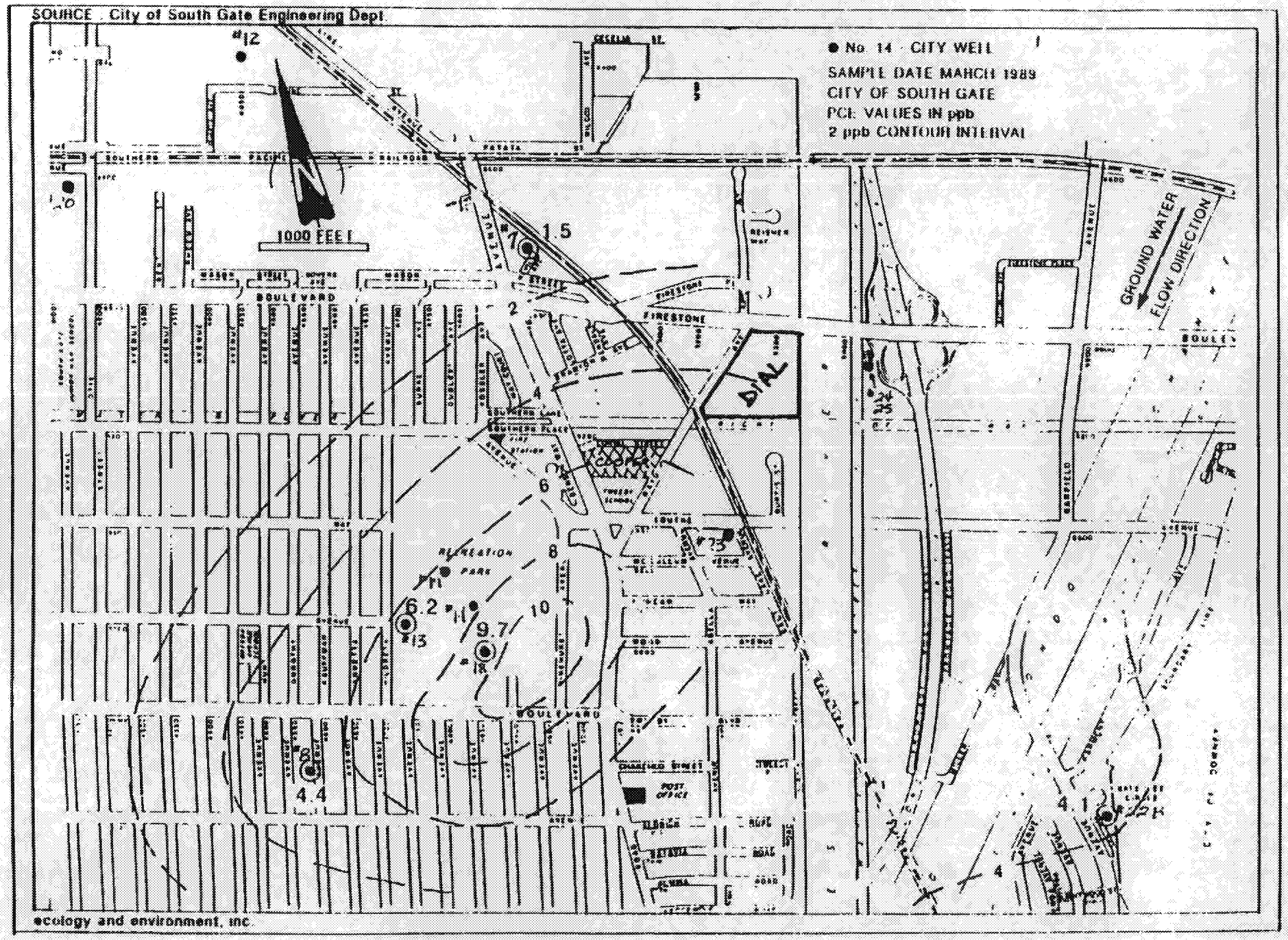


Figure 4-8 CONTOUR OF PCE VALUES IN VICINITY OF COOPER DRUM MARCH 1989 SAMPLING EVENT

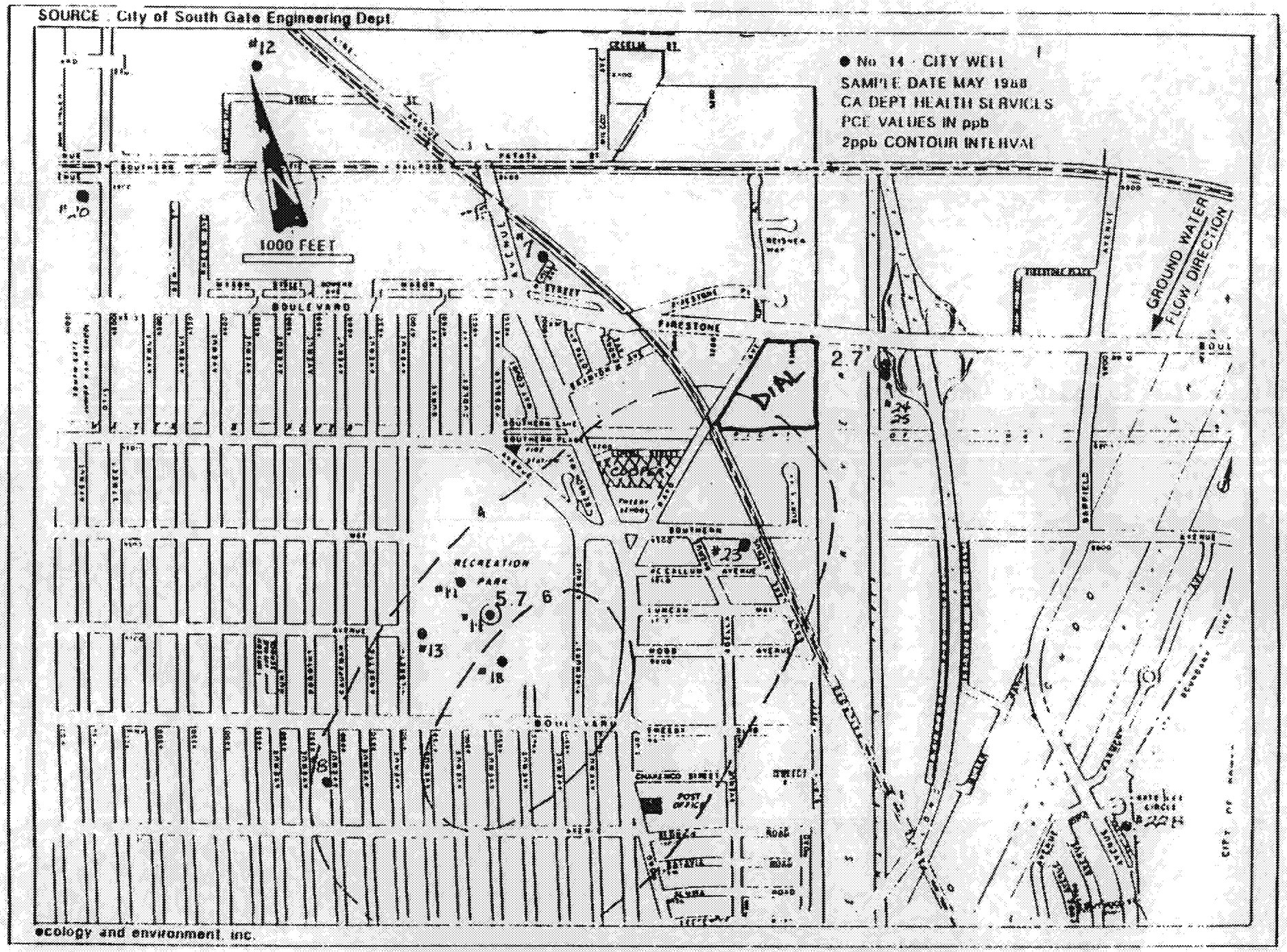


Figure 4-7 CONTOUR OF PCE VALUES IN VICINITY OF COOPER DRUM
MAY 1988 SAMPLING EVENT

ENSR

Consulting • Engineering • Remediation

1220 Avenida Acaso
Camarillo, CA 93012

(805) 388-3775
FAX (805) 388-3577
http://www.ensr.com

July 2, 1997
Project No. 2277.006

Mr. J. E. Ross, Unit Chief
Site Cleanup Unit
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: File No. 95-066, Dial Corporation, Main Facility, 9300 Rayo, South Gate

Subject: Response to Dodecylbenzene Risk Assessment Addendum

Dear Mr. Ross:

In February, 1997, a health-risk assessment addendum, amending the original document prepared by EMCON (January, 1994) for dodecylbenzene-impacted soils at the referenced former Dial Corporation facility, was forwarded to the California Regional Water Quality Control Board-Los Angeles Region (RWQCB) for review and comment. The health-risk assessment addendum was prepared consistent with the workplan prepared by EMCON dated June 5, 1996, and was approved by the RWQCB on August 16, 1996. Several comments regarding the risk assessment were provided by the RWQCB in a letter to ENSR dated April 29, 1997. A point-by-point response to each comment is provided below.

Some of these comments have been verbally discussed by RWQCB staff and representatives from ENSR and SECOR since issuance of the April 29, 1997 letter, and are incorporated by reference into the applicable response.

RWQCB Comment

1. *The Layton 1987 paper is very scenario specific and may not be applicable to the Dial site for derivation of reference dose from lethal dose.*

ENSR Response

This condition is essentially summarized under RWQCB comment number three. Therefore, a response to this comment is deferred and provided below.

RWQCB Comment

2. *It is necessary for Water Board staff to review the Layton paper in detail to determine the appropriateness of using a modified factor of 200,000 for converting from lethal dose 50 (LD50) to reference dose.*

ENSR Response

As noted above, this condition is essentially summarized under comment number 3 below. Given our approach to comment number 3, review of the Layton paper will not required.

RWQCB Comment

3. *We believe that it is simpler for you to justify using ethylbenzene as a surrogate compound for DDB. We would have no objections to this conservative approach since ethylbenzene is more toxic than DDB. Since the derived reference dose for DDB is very similar to that of ethylbenzene, the conclusion of the risk assessment would not be very far apart.*

ENSR Response

An amendment to the health-risk assessment addendum will be prepared consistent with the RWQCB recommendation. Following an approach discussed by Rebecca Chow of the RWQCB and Mark Stelljes of SECOR (June 6, 1997), ethylbenzene will be employed as a surrogate for dodecylbenzene. The ethylbenzene will be used as a surrogate for reference dose and physical properties in estimation of outdoor air concentrations. Intake assumptions will be the same as those for dodecylbenzene. The data derived will be used in comparison with and to verify the conclusions drawn regarding dodecylbenezene risk using structure activity analysis. The amended health-risk assessment using the ethylbenzene surrogate will be presented to the RWQCB during our meeting scheduled for July 10, 1997.

RWQCB Comment

4. *Please provide field data and analytical results for porosity, bulk density, and organic carbon content. Since there are site-specific soil data available and the model was run by using SESOIL recommended values, a justification or explanation needs to be given relating the site-specific data to SESOIL values. In addition, the range of input parameters for f_{oc} and porosity has to be justified by field data.*

ENSR Response

Site specific field data were supplied in Appendix A of the health-risk assessment addendum and discussed in Section 2.2.1. Additionally, the data were supplied in the "Closure Report" as Plate E-4 and E-5. A discussion and justification of the use of SESOIL recommended values is provided in Section 2.0 of the health risk assessment addendum, on pages 2-7 and 2-8.

Due to the special vadose input requirements of the SESOIL model, as explained in the addendum, it was not possible to directly use the field data collected at the site. Rather, SESOIL's exhaustive soil property database was used in conjunction with site-specific soil types to select appropriate inputs to the model. Where appropriate, field analytical data were compared to recommended SESOIL values and a weighted average or most-conservative input value or range of values was used in the modeling.

In the case of F_{oc}, a conservative approach was used in the modeling effort by selecting the lower recommended SESOIL value of 0.1 percent, rather than the range of values derived from laboratory analysis of between 0.25 and 0.34. As noted on page 2-7, although porosity data were collected from four soil samples (0.46 to 0.49), the SESOIL model uses effective porosity, which is different from the value calculated by the laboratory, and approximates the specific yield (S_y) of a soil or the volume of water that will drain by gravity as a percentage of the total volume of soil and voids. The soil types derived from sampling were used in derivation of a weighted value for effective porosity.

RWQCB Comment

5. *Please provide an explanation on the development of the K_{oc} value.*

ENSR Response

The K_{oc} was developed using a regression equation as provided in Lyman, 1990 (Table 4-1, Equation 4.6) and recommended by Cal EPA (Decision Tree Manual, 1986) of the form: 0.44 - 0.54 log S (where "S" is the solubility in logmole fraction). Solubility was established by the quantitative structure activity analysis and shown on Tables 2-8 and 2-9.

RWQCB Comment

6. *Section 2.2.1 stated that since 95UCL values were used for chemical specific properties, it is not appropriate to perform a sensitivity analysis. This may be acceptable for chemical-specific properties since a comparison of mean and 95UCL values was performed. However, a sensitivity analysis is still required for soil-specific properties such as porosity and f_{oc}. Also a summary table for the sensitivity analysis results should be provided.*

ENSR Response

As noted under comment No. 4, more conservative recommended SESOIL values were used in the vadose zone modeling of dodecylbenzene fate and transport. In the case of porosity, a weighted average of effective porosity values derived from literature and those recommended in SESOIL were used in fate and transport modeling. A conservative approach was used in selection of model input parameters, thus providing a "worst case" scenario. Because conservative values were used, a sensitivity analysis was not considered appropriate as a "worst-case" condition was modeled.

ENSR

Closure

At this time, it is our intention to present the results of the additional modeling using the ethylbenzene surrogate and provide an amended health-risk assessment addendum at the meeting scheduled for July 10, 1997. It is anticipated that the ethylbenzene surrogate should confirm the results of the quantitative structure activity analysis and the health-risk assessment addendum provided to the RWQCB in February, 1997. If you have any questions regarding our response to comments, please call me at your earliest convenience. I would like to discuss any concern the RWQCB may have prior to our meeting of July 10, 1997, if at all possible. I look forward to meeting with the RWQCB staff on July 10, 1997.

Sincerely,

Michael E. Flack, C.E.G.

Senior Program Manager

c: Michael Cavanaugh, Dial Corporation
Mark Stelljes, SECOR
John Lang, Quantum Management Group, Inc.

ENSR
Consulting • Engineering • Remediation

1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
FAX (805) 388-3577
http://www.ensr.com

May 14, 1997

Mr. Jim Ross
Unit Chief, Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: **FILE No. 95-066, Dial Corporation, South Gate**

Subject: **Final Closure Report**

Dear Mr. Ross :

ENSR is please to submit the Final Closure Report for the referenced Dial Corporation Facility at 9300 Rayo Avenue, South Gate, California. The report presents the results of a closure and post-closure assessment program conducted from September 1996 through February, 1997. Because of ongoing discussions regarding the sale of the property, we would appreciate an expedited review of the report. Upon review of the document, we would like to discuss our findings and conclusions with the RWQCB staff at your earliest convenience. Please contact me regarding the review schedule and when we might be able to meet to discuss the results.

Thankyou in advance for your attention to this matter and your staffs corporation and efforts in oversight of the project. I look forward to hearing from you at your earliest convenience.

Sincerely,

Michael E. Flack, C.E.G.
Senior Program Manager

Attachment: Dial Corporation, Final Closure Report

cc. Michael Cavanaugh, Dial Corporation
John Lang, Quantum Management Group, Inc.

Cal/EPA

Los Angeles Regional Water Quality Control Board

101 Centre Plaza Drive
Monterey Park, CA
91754-2156
(213) 266-7500
FAX (213) 266-7600

Pete Wilson
Governor

April 29, 1997

Michael Flack
~~ENSR~~
1220 Avenida Acaso
Camarillo, CA 93012

DIAL CORPORATION, MAIN FACILITY - 9300 RAYO AVENUE, SOUTH GATE - (FILE NO. 95-066)

We have reviewed the Health Risk Assessment (HRA) Addendum for Dodecylbenzene (DDB), dated February 10, 1997, for the above mentioned site. In reviewing the HRA, Dr. Rebecca Chou also consulted with Dr. A. Kimiko Klein at the Office of Scientific Affair of the Department of Toxic Substances Control. Based upon the information submitted and our discussions with DTSC staff, we have the following comments:

1. The Layton 1987 paper is very scenario specific and may not be applicable to the Dial site for derivation of reference dose from lethal dose.

2. It is necessary for Water Board staff to review the Layton paper in detail to determine the appropriateness of using a modifying factor of 200,000 for converting from lethal dose 50 (LD50) to reference dose.

3. We believe that it is simpler for you to justify using ethylbenzene as a surrogate compound for DDB. We would have no objections to this conservative approach since ethylbenzene is more toxic than DDB. Since the derived reference dose for DDB is very similar to that of ethylbenzene, the conclusion of the risk assessment would not be very far apart.

4. Please provide field data and analytical results for porosity, bulk density, and organic carbon content. Since there are site-specific soil data available and the model was run by using SESOIL recommended values, a justification or explanation needs to be given relating the site-specific data to SESOIL values. In addition, the range of input parameters for f_{oc} and porosity has to be justified by field data.

5. Please provide an explanation on the development of the K_{oc} value.

6. Section 2.2.1 stated that since 95UCL values were used for chemical specific properties, it is not appropriate to perform a sensitivity analysis. This may be acceptable for chemical-specific properties since a comparison of mean and 95UCL values was performed. However, a sensitivity analysis is still required for soil-specific properties such as porosity and f_{oc}. Also a summary table for the sensitivity analysis results should be provided.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.

J.E. ROSS, Unit Chief
Site Cleanup Unit

EMCON
1433 North Market Boulevard • Sacramento, California 95834-1943 • (916) 928-3300 • Fax (916) 928-3341

#443

February 11, 1997
Project 20H93-001.009

J.E. Ross
Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Former Dial Facility - Main Area - 9300 Rayo Avenue, South Gate, California (File No. 95-066)

Dear Mr. Ross:

EMCON, on behalf of the Dial Corporation (Dial), is pleased to submit the Dodecylbenzene Health Risk Assessment Addendum (HRA) for the referenced Dial facility. The HRA was prepared as an addendum to the risk assessment prepared by EMCON in January 1994 for the dodecylbenzene-impacted soil. EMCON proposed using a quantitative structure-activity relationship (QSAR) method to address the comments pertaining to the initial risk assessment (RWQCB, February 1996). The HRA was prepared consistent with the EMCON QSAR workplan dated June 5, 1996, and in response to comments received by the RWQCB dated August 16, 1996.

The objective of the HRA was to establish risk to human health and the shallow groundwater from dodecylbenzene-impacted soils identified at the subject site. The QSAR methodology was implemented and site-specific soil data were gathered to resolve uncertainty in input parameters and revise the SESOIL modeling evaluating possible leaching of dodecylbenzene to groundwater. An ecological risk assessment was not addressed in the addendum, because the site is in an industrial area and is adjacent to the conrete-lined Los Angeles River. No aquatic habitats are supported by the "river" and as such no ecological receptors are expected to be present.

The results of the SESOIL modeling using the refined fate and transport parameters, along with physical soil properties measured at the site, indicate that dodecylbenzene is not expected to leach to groundwater over a 99-year period. The results of volatilization modeling and other exposure pathway analysis, in combination with the refined reference dose developed through QSAR analysis, indicate that possible exposure to dodecylbenzene are below levels of concern to regulatory agencies. Therefore, no further action is required

to adequately protect human health or groundwater quality from dodecylbenzene detected in the subsurface soils. Based on these results, no deed restriction relative to nonresidential use of the site should be necessary.

We are presently in negotiation for sale of the property and would like to resolve the matter of the dodecylbenzene-impacted soils in a timely manner. If you have any questions or comments regarding the findings and conclusions of the HRA, please feel free to call me at (916) 928-3300 ext. 311 at your earliest convenience. Thank you for your prompt attention to this matter and your staff's continued support toward the timely completion of this project.

Sincerely,

EMCON

Mark E. Stelljes

Mark E. Stelljes, Ph.D.
Risk Assessment and Toxicology Manager

Attachments: Dodecylbenzene Health Risk Assessment Addendum
Disk of SESOIL Input and Output (Appendix B) - RWQCB only

cc: Mr. Michael Flack (Fugro)
Mr. John Lang (Quantum Management Group)
Mr. John Ferguson (Dial Corporation)

/EPA

: Angeles
;ional Water
ality Control
ard

Centre Plaza Drive
terey Park, CA
4-2156
) 266-7500
: (213) 266-7600

Pete Wilson
Governor

December 24, 1996

Michael E. Flack
Fugro West, Inc.
5855 Olivas Park Drive
Ventura, CA 93003-7672

FORMER DIAL FACILITY - MAIN AREA - 9300 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

We have reviewed the Interim Closure Assessment Deliverable, dated December 16, 1996, for the above mentioned site. Based upon the information submitted, we have no objections to the additional sampling as proposed, with the following modifications:

1. The majority of constituents that do not meet our screening level criteria are primarily ammonia, MBAS, and pH. In order to determine if these inorganic constituents have impacted the groundwater, pH should also be included in the proposed groundwater analysis program.

2. In addition to your proposal to assess the vertical extent of contamination in AGT Area V, Building 2 and 14 clarifier, HA-2, and HA-7, the lateral extent of contamination should also be assessed.

If you have any questions, please contact Ms. Jenny Au at (213) 266-7578.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: John Ferguson, The Dial Corporation
John Lang, Quantum Management Group, Inc.

RECEIVED
DEC 30 1996
FUGRO - WEST, INC.

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, CA 93003-7672
Tel: (805) 650-7000
Fax: (805) 650-7010

96 DEC 18 AM 7:53

TRANSMITTAL

December 17, 1996
Project No. 96-48-3411

California Regional Water Quality Control Board
Los Angeles Region
Site Cleanup Unit
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Attention: Ms. Jenny Au

Subject: Interim Closure Assessment Deliverable. The Dial Corporation, 9300 Rayo Avenue, South Gate, California (File No. 95-066), dated December 1996

We are sending two copies of the above-referenced material for your use.

One copy each is being sent to:

The Dial Corp
Consumer Products Group
1850 North Central Avenue
Phoenix, Arizona 85077-1713

Attention: Mr. John Ferguson

Quantum Management Group, Inc.
2811 Observatory Avenue
Cincinnati, Ohio 45208

Attention: Mr. John Lang

Thank you for the opportunity to be of service.

Sincerely,

FUGRO WEST, INC.

Michael E. Flack, C.E.G.
Manager of Geoenvironmental Services

☒ Overnight a.m.
☐ Overnight p.m.
☐ Regular Mail

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, CA 93003-7672
Tel: (805) 650-7000
Fax: (805) 650-7010

96 DEC 18 AM 7:53

December 16, 1996
Project No. 96-48-3411

California Regional Water Quality Control Board-
Los Angeles Region
Site Cleanup Unit
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Attention: Mr. Jim Ross

Subject: (File No. 95-066), Interim Closure Assessment Deliverable. The Dial Corporation, 9300 Rayo Avenue, South Gate, California.

Dear Mr. Ross:

This report is provided as an "interim deliverable" to the final closure report for the former Dial Facility at 9300 Rayo Avenue, South Gate, California. The closure sampling and analytical program was conducted from September to October 1996, consistent with the scope and procedures outlined in the EMCON Closure Plan dated June 19, 1996, and the Fugro West, Inc. (Fugro), Closure Plan Addendums of July 30 and September 9, 1996. The Regional Water Quality Control Board-Los Angeles Region (RWQCB) approved the closure plan dated June 19 and addendum dated July 30, 1996, in a written letter to Dial dated August 8, 1996. The additional addendum was verbally approved by the RWQCB on September 19, 1996. The site buildings and structures have been demolished and site grading was completed by mid-November 1996.

As the majority of the sampling program and removal action has been completed, our objective in presenting this data is to allow the RWQCB to review and approve an additional assessment program for inclusion in the remaining portion of the closure sampling effort. Installation of three groundwater monitoring wells and four confirmatory soil borings remain to be completed as part of the original closure sampling program.

We anticipate starting the field program to complete the remainder of the closure sampling program and initiating the recommended assessment program as outlined in the attached report in late December 1996 or early January 1997. We would appreciate an expedited review of our proposed additional assessment program so that it may be included as part of the mobilization onto the site in December or early January.

If you have any questions or comments to the proposed assessment program or the closure data for the site, please do not hesitate to call me at your earliest convenience. As always, thank you for your staffs' continued support in meeting our project objectives for this property.

Sincerely,

FUGRO WEST, INC.

Michael E. Flack C.E.G.
Manager of Geoenvironmental Services

MEF:val

c: John Ferguson, The Dial Corporation
John Lang, Quantum Management Group, Inc.

96 DEC 18 AM 7:53
L.A. ANGELES REGION

Southern California Laboratory

Analysis Request Form

Name of Sampler: Jenny Au

Phone No: (ATSS) _____

(213) - 266-7576

Sampler Employed By:
R.W.Q.C.Board No. : [X] 4 [] 6 [] 7 [] 8 [] 9

Sample Source: Dial - ~~So Parking~~ Main Facility

Date Collected : 9/16/96 Analysis Task No. _____

Sample Type : [] Drinking water : [] Ground water [] Surface water
[] Waste water : Chlorinated : [] Yes [] No
[] Solid sample : [X] Soil [] Sludge [] Sediment
[] Other _____

Use your own Bottle ID. No. for each bottle.

For Lab use Log Number	Bottle ID. No.	Sampling Point	Time collected	Type of Analysis required (Be Specific)
609 8381	S-	Stormwater Clarifier bottom		VOCs

Warning or Special Instruction on Samples :

Seals: [] Intact [] None [] Broken		Date	Time
Samples Relinquished by			
Samples Relinquished by			
Received for Lab by	C. Fernando	9/17/96	2:05

(For Lab use only)Total cost for Lab analyses :

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 609-8381

DATE REPORTED : 9/19/96

All reporting units = ug/kg (ppb) ND = None Detected
Estimated Detection Limit For All Analytes = 10 ppb
METHOD USED : EPA 8260

Analyte	STORET CODE	ANALYSIS RESULTS
Benzene	34030	ND
Bromobenzene	81555	ND
Bromochloromethane	A-012	ND
Bromodichloromethane	32101	ND
Bromoform	32104	ND
Bromomethane (Methyl bromide)	34413	ND
n-Butylbenzene	A-010	ND
sec-Butylbenzene	77350	ND
tert-Butylbenzene	77353	ND
Carbon tetrachloride	32102	ND
Chlorobenzene (Monochlorobenzene)	34301	ND
Chloroethane	34311	ND
Chloroform	32106	ND
Chloromethane (Methyl Chloride)	34418	ND
o-Chlorotoluene (2-Chlorotoluene)	A-008	ND
p-Chlorotoluene (4-Chlorotolnene)	A-009	ND
Dibromochloromethane	32105	ND
Dibromomethane	77596	ND
1,2-Dichlorobenzene (o-DCB)	34536	ND
1,3-Dichlorobenzene (m-DCB)	34566	ND
1,4-Dichlorobenzene (p-DCB)	34571	ND
Dichlorodifluoromethane (Freon 12)	34668	ND
1,1-Dichloroethane (1,1-DCA)	34496	ND
1,2-Dichloroethane (1,2-DCA)	34531	ND
1,1-Dichloroethylene (1,1-DCE)	34501	ND
cis-1,2-Dichloroethylene	77093	ND
trans-1,2-Dichloroethylene	34546	ND
1,2-Dichloropropane	34541	ND
1,3-Dichloropropane	77173	ND
2,2-Dichloropropane	77170	ND
1,1-Dichloropropylene	77168	ND
cis- & trans-1,3-Dichloropropylene	34561	ND

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 609-8381

DATE REPORTED : 9/19/96

All reporting units = ug/kg (ppb) ND = None Detected
Estimated Detection Limit For All Analytes = 10 ppb
METHOD USED : EPA 8260

Analyte	STORET CODE	ANALYSIS RESULTS
Ethyl benzene	34371	ND
Ethylene dibromide (EDB)	77651	ND
Hexachlorobutadiene	34391	ND
Isopropylbenzene (Cumene 77356)	77223	ND
p-Isopropyltoluene (p-Cymene)	A-011	ND
Methylene chloride (Dichloromethane)	34423	ND
Methyl Ethyl Ketone	81595	ND
Methyl Isobutyl Ketone	81596	ND
Naphthalene	34696	ND
n-Propylbenzene	77224	ND
Styrene	77128	ND
1,1,1,2-Tetrachloroethane	77562	ND
1,1,2,2-Tetrachloroethane	34516	ND
Tetrachloroethylene (PCE)	34475	ND
Toluene	34010	ND
1,2,3-Trichlorobenzene	77613	ND
1,2,4-Trichlorobenzene	34551	ND
1,1,1-Trichloroethane (1,1,1-TCA)	34506	ND
1,1,2-Trichloroethane (1,1,2-TCA)	34511	ND
Trichloroethylene (TCE)	39180	ND
1,2,3-Trichloropropane	77443	ND
Trichlorofluoromethane (Freon 11)	34488	ND
1,2,4-Trimethylbenzene	77222	ND
1,3,5-Trimethylbenzene	77226	ND
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611	ND
Vinyl chloride (VC)	39175	ND
m,p-Xylenes	A-014	ND
o-Xylene	77135	ND

FUGRO

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, CA 93003-7672
Tel: (805) 650-7000
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September 9, 1996
Project No. 96-48-3410

California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Attention: Mr. Jim Ross

Subject: File No. 95-066: Closure Plan Addendum, Former Dial Main Facility, 9300 Rayo Avenue, South Gate, California

Dear Mr. Ross:

This letter serves as an addendum to the EMCON Site Closure Plan dated June 19, 1996, for the Dial Corp. (Dial), former Main Facility at 9300 Rayo Avenue, South Gate, California. This second addendum provides a sampling and analysis plan (SAP) for closure of heretofore unknown additional waste management units (WMUs) discovered during site demolition operations and for the former 4,200-gallon fuel oil underground storage tank (UST) that was closed in-place below the southwestern corner of Building 8 in 1984. Further, this letter outlines the remedial action plan (RAP) and confirmatory SAP for areas where environmentally impaired soils have been discovered in the vicinity of Building 8 as of August 30, 1996.

During a site visit on August 20, 1996, The Environmental Group (TEG) personnel directed Fugro to the following areas, which either had not been previously identified or showed indications of environmental impairment. The site conditions described below were made from observations made by Fugro personnel and/or from site conditions described by TEG. The areas described below are shown on Figure 1.

- A small sump in the northeast corner of Building 5 adjacent to the building boiler tank area (hereafter referred to as Sump ZZ). No liquid was present in the sump or was observed in the excavation pit. No visual impairment to the soil was observed below the sump.

- A large concrete brine tank located due west of EMCON boring B-8 and the caustic unloading area between the former railroad tracks. The dimensions of this tank are approximately 42 feet (long) by 20 feet (wide) by 8 feet (deep). Based on previous EMCON drawings, Boring B-8 was drilled within 5 feet of the eastern edge of the tank.

- A small sump located in the central portion of Building 8 (hereafter referred to as sump ZX). This sump was apparently located in the vicinity of the former oleum tank and an etched area of concrete previously identified for sampling. Upon removal, the sump bottom was observed to be etched and stained white and yellow at the base. Soils directly below the sump were also observed to be stained white, which is suggestive of low pH conditions directly below the sump.

- Yellow- and white-stained concrete and surface soils were also observed upon removal of the concrete base to the former acid wash pit area due west of Building 8.

- A release of a small amount of brownish-colored liquid was observed to drain into the excavation upon removal of the sump designated as "G" at the southeast corner of the acid storage tank area. According to TEG, the liquid had a tested pH of 13 using litmus paper. Liquid from the sump pit was transferred into 55-gallon Department of Transportation 17-H drums and tested for pH, chloride, phosphate, methylene blue active substances (MBAS), ammonia, and petroleum hydrocarbons (C4 through C23 range) by TEG. Sample results are pending.

The Regional Water Quality Control Board (RWQCB) was escorted through the site and shown the above-mentioned areas on August 21, 1996. The areas identified above have been delineated with caution tape and separated from further excavation and concrete removal actions associated with site demolition. Liquids contained in the sump "G" pit have been removed and etched or stained concrete has been segregated from nonimpacted concrete scheduled for crushing. As has been verbally indicated, Dial will remove the former 4,200-gallon UST which was closed in-place below the southwestern corner of Building 8.

A closure SAP for sump ZZ, the brine tank west of EMCON boring B-8, and the 4,200-gallon UST below the southwestern corner of Building 8 is provided below. Further, a RAP for removal of impacted soils is provided for the areas around Building 8.

CLOSURE PLAN ADDENDUM

General Procedures

Sump ZZ and the brine tank will be removed and sampled as described in the EMCON Closure Plan of June 19, 1996. Soil samples will be collected approximately 1 foot below the base of the sump and each end of the brine tank using either a hand auger or directly from the backhoe bucket. Soil samples will be collected using stainless steel sample sleeves that will be labeled with the date and time of collection, sampler's initials, sample depth, and analyses required. This information along with the sample condition (e.g., odor and discoloration) will be

noted in the field logbook. The soil samples will be placed in a chilled container for transport to a California state-certified laboratory along with the appropriate chain-of-custody documentation.

Sump ZZ Analyses

Sump ZZ is located in the northeast corner of Building 5 adjacent to the building boiler tank. Building 5 housed the spray dryer and detergent storage tanks. The SAP for Sump ZZ will consist of the analysis of one soil sample collected from beneath Sump ZZ for the presence of MBAS using U.S. EPA method 425.1.

Brine Tank Analyses

The brine tank is located west of EMCON boring B-8 and the caustic unloading area between the former railroad tracks. A soil sample collected at a depth of 20 feet below the ground surface (bgs) from EMCON boring B-8 contained a pH of 9 and phosphate and chloride concentrations of 520 and 45 mg/kg, respectively. Once the brine tank is removed, two closure soil samples will be collected and analyzed for pH using U.S. EPA method 9045, and chloride and phosphates using U.S. EPA method 300.0.

Building 8 UST Analyses

The former fuel oil UST was located below the southwest corner of Building 8. The SAP for the Building 8 tank will be performed consistent with the RWQCB request contained in the letter dated August 8, 1996. Once the fuel oil tank is removed, the excavated soils will be screened with a photoionization detector and the excavation will be logged by a geologist consistent with a Rule 1166 Permit for the site. Five closure soil samples will be collected and analyzed from each wall and bottom of the excavation. The samples will be analyzed for total petroleum hydrocarbons (TPH) in the carbon range of C_4 - C_{23} using U.S. EPA method modified 8015. The samples will also be analyzed for benzene, toluene, ethylbenzene, and total xylenes using U.S. EPA method 8020.

Table 1 contained in the June 19, 1996, closure plan has been revised to reflect the changes in the sampling program for closure of the subject structures

REMEDIAL ACTION PLAN

Former Acid Wash Pit Area

All visually impacted concrete debris and soil will be removed below the base of the former acid wash pit foundation. Excavated soil and concrete will be stockpiled and covered with Visqueen plastic pending consideration of onsite treatment or disposal options. Excavated soil

will be kept moist to minimize dust consistent with the health and safety plan prepared for the remedial excavation programs in the Building 8 area.

Once the visually impacted soils are removed from the acid wash pit area, selected soil samples will be collected from the base of the excavation and field screened for pH using a modification of U.S. EPA method 9045. A small amount of soil from the screening samples and Type II water will be placed into a sampling jar. The soil and water will be mixed and allowed to equilibrate for a period of up to 20 minutes. The slurry will be tested for pH using a hand-held pH, temperature, conductivity meter. The meter will be calibrated prior to and following completion of the field screening. When field screening data suggest the pH of the soil in the excavation is greater than 5, confirmatory soil samples will be collected. Sample locations and field screening results will be logged into the sampler's field logbook.

Two soil samples will be collected from the stockpiled soil and six soil samples from the acid pit excavation. The soil samples will be analyzed for pH using U.S. EPA method 9045. Soil samples will be collected using stainless steel sample sleeves that will be labeled with the date and time of collection, sampler's initials, sample depth, and analyses required. This information along with the sample condition (e.g., odor and discoloration) will be noted in the field logbook. The soil samples will be placed in a chilled container for transport to a California state-certified laboratory along with the appropriate chain-of-custody documentation.

Sump ZX (Middle of Building 8)

All visually impacted soil will initially be removed below the base of the existing Sump ZX excavation and will be stockpiled and covered with Visqueen plastic pending consideration of onsite treatment or disposal options. Soil from this excavation will be kept separate from the acid wash pit excavated material. Once the visually impacted soils are removed from the former sump area, selected soil samples will be collected from the excavation and field screened for soil pH as described above. When field screening data indicate the pH of the soil in the excavation is greater that 5, confirmatory soil samples will be collected for laboratory analysis.

Four soil samples will be collected from the walls and bottom of the sump ZX excavation, and one soil sample will be collected from the stockpile of excavated soils. Attempts will be made to collect the stockpile sample from the soil that is visually impacted and contains the lowest pH. The soil samples will be analyzed for pH using U.S. EPA method 9045. Soil samples will be collected using stainless steel sample sleeves that will be labeled with the date and time of collection, sampler's initials, sample depth, and analyses required. This information along with the sample condition (e.g., odor and discoloration) will be noted in the field logbook. The soil samples will be placed in a chilled container for transport to a California state-certified laboratory along with the appropriate chain-of-custody documentation.

Sump "G"

All visually impacted soil will initially be removed below the base of the sump "G" excavation. Excavated soil will be stockpiled and covered with Visqueen plastic, separate from the material as described above. Once the visually impacted soils or soils that appear to be moist or wet from the release of fluid are removed below the former sump area, selected soils samples will be field screened for soil pH as described above. Soil pH is proposed as the indicator parameter for guidance of the remedial excavation pending the results of the sampling program of the liquid released into the soil from sump "G". Once the results of the sampling program for the liquid released from sump "G" have been received, the analyte testing program will be modified accordingly to reflect the composition of the liquid and presence of chemicals of concern (COCs). When field screening data suggest the pH of the soil in the excavation is less than 9.5, confirmatory soil samples will be collected for laboratory analysis. A pH of 8.4 was reported in a soil sample collected at a depth of 10 feet bgs from EMCON boring B-17 drilled along the western edge of sump "G".

One soil sample each will be collected from the bottom of the sump "G" excavation and the stockpiled soil. The soil samples may be analyzed for pH using U.S. EPA method 9045, MBAS (surfactants) using U.S. EPA method 425.1, chlorides and phosphates using U.S. EPA method 300.0, ammonia using U.S. EPA method 350.3, and TPH using U.S. EPA method modified 8015 for carbon range C_4 - C_{23}. As stated above, the closure analytical program will be modified to reflect the composition of COCs in the liquid released into the sump pit.

Soil samples will be collected using stainless steel sample sleeves that will be labeled with the date and time of collection, sampler's initials, sample depth, and analyses required. This information along with the sample condition (e.g., odor and discoloration) will be noted in the field logbook. The soil samples will be placed in a chilled container for transport to a California state-certified laboratory along with the appropriate chain-of-custody documentation.

CLOSING

The closure program for WMUs and UST at the Dial Main Facility is scheduled to begin during the week of September 2, 1996. The RAP will commence upon completion of the closure sampling program on or about September 16, 1996. We would appreciate an expedited review of the closure plan addendum so that we may include these sumps, UST, and impacted areas in the scheduled closure program. If you have any questions, please do not hesitate to call either of the undersigned at your earliest convenience.

FUGRO

Thank you for your prompt attention to this matter and your staff's continued diligence to meet project goals.

Sincerely,

FUGRO WEST, INC.

FOR

Lance Lawhon
Project Geologist

Michael E. Flack
Manager of Geoenvironmental Services

LJL/MEF:dc

Attachment: Table 1 - Amended Sump, and Clarifier Closure Sampling Plan
Figure 1 - Site Plan Showing Newly Identified Facilities to be Closed and Remedial Excavation Areas

c: John Ferguson, The Dial Corp.
John Lang, Quantum Management Group, Incorporated
Jenny Au, RWQCB-Los Angeles, Site Cleanup Unit

FUGRO

TABLE 1
Sump, Clarifier, and Drain Sampling Plan

The Dial Corporation
Main Facility, South Gate

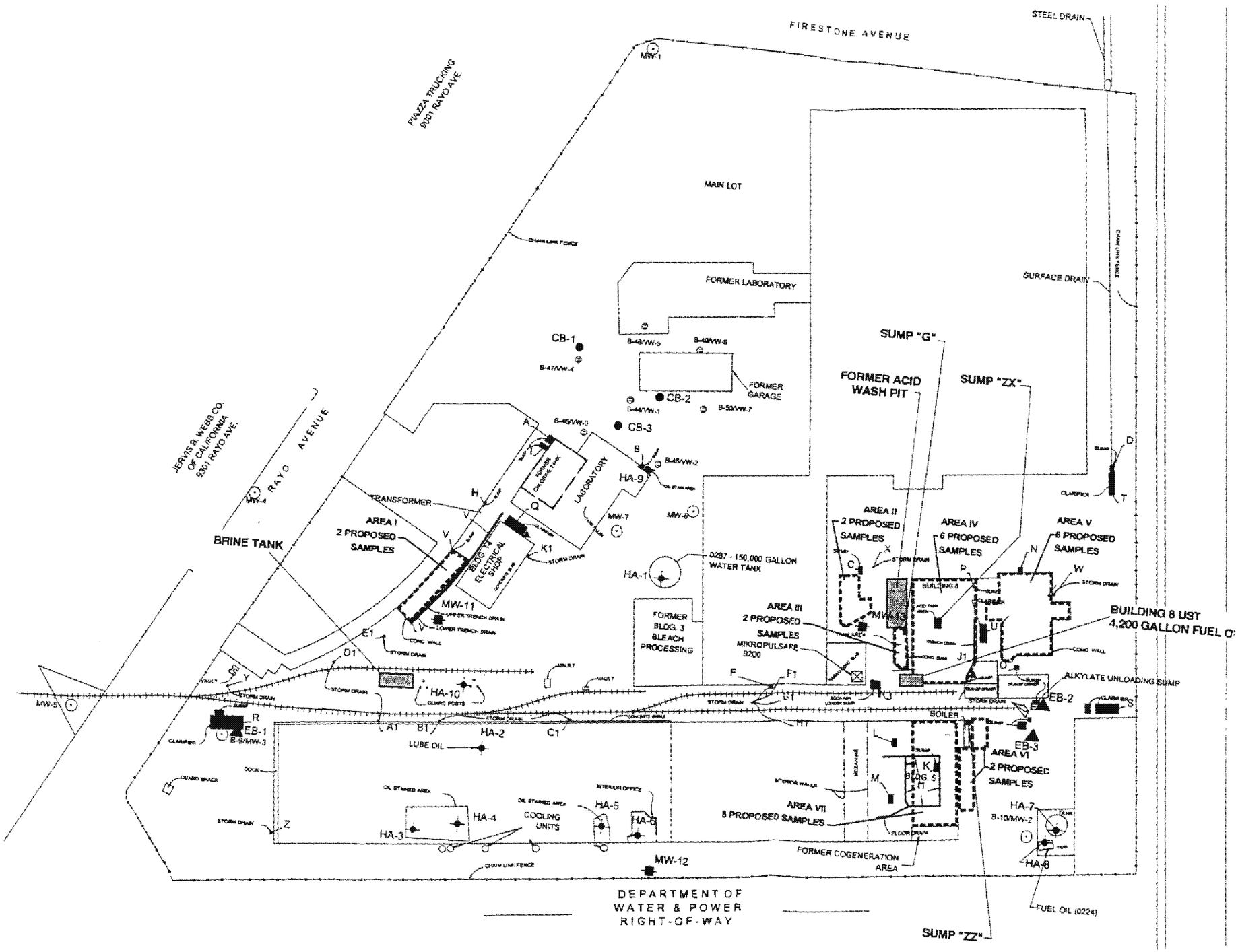
Reference Letter	Locations	Previous Sampling Points	Previous Analysis	Proposed Closure Analysis	Number of Samples
SUMPS					
A	Pump sump next to Bldg. 2 bleach tank	B-3	TPH-FC and pH	None	0
B	Polydrum sump north of Bldg. 2 lab.	B-4	TPH-FC, Form., VOCs, pH, and phenol	None	0
C	Sump east of Bldg. 4 and old cooling tower	B-11	pH and Cr	ammon	1
D	Drain sump by Bldg. 15	B-13	TPH-FC and Form.	TPH-FC and VOCs	2
E	Alkane unloading sump	B-15, B-22, B-24, B-42 and H-1	TPH-FC	None	0
F	Storm water sump north of Bldgs. 6 and 7	B-18	TPH-FC, pH, phos., and chlor.	None	0
G	*Sump west of Bldg. 8 (Area of Impacted Soils)*	*B-17*	*pH*	*pH, MBAS, chloride phosphates, ammonia, TPH-FC*	*4*
H	Sump east of Bldg. 1	None	None	chlor.	1
I	Southern sump next to Bldg. 2 chlorine tank	None	None	chlor	1
J	Soda ash loader sump between Bldgs. 4 and 8	None	None	pH	2
K,L,M	Bldg. 5 sumps	None	None	pH and MBAS	3
N	Sump north of AST farm weigh station	None	None	pH, chlor., ammon., and TPH-FC	1
O	Sump south of AST farm weigh station	None	None	pH, chlor., ammon., and TPH-FC	1
P	Sump inside Bldg. 8	None	None	pH, chlor., ammon., and TPH-FC	1
ZZ	*Sump inside Bldg. 5 Boiler Room (Newly Identified)*	*None*	*None*	*MBAS*	*1*
ZX	*Sump inside Bldg. 8 Boiler Room (Area of Impacted Soils)*	*S-10*	*pH, TPH, Chloride, Phosphate*	*pH*	*4*
Acid Pit	*Former Acid Wash Pit West of Building 8 (Area of Impacted Soils)*	*B-17*	*pH*	*pH*	*6*
CLARIFIERS					
Q	Clarifier between Bldgs. 2 and 14	B-1	PCBs, TPH-FC, Form., VOCs, pH, Cr, phos., and chlor.	VOCs	2
R	Clarifier near south gate	B-9	TPH-FC and pH	TPH-FC, VOCs, pH, MBAS, chlor, phos	2

TABLE 1
Sump, Clarifier, and Drain Sampling Plan

The Dial Corporation
Main Facility, South Gate

Reference Letter	Locations	Previous Sampling Points	Previous Analysis	Proposed Closure Analysis	Number of Samples
S	Clarifier near storm water retention tanks	B-14	PCBs, TPH-FC, VOCs, and pH	TPH-FC, VOCs, ph, MBAS, chlor, phos	2
T	Clarifier southeast of Bldg. 15	B-15	TPH-FC and Form	VOCs and TPH-FC	2
U	Clarifier east of Bldg. 8	None	None	pH, chlor, ammon., and TPH-FC	2
DRAINS					
V	Trench drain between Bldgs. 1 and 14	B-2 and B-1	pH, Cr, phos., chlor. PCBs, TPH-FC,and Form.	chlor., ammon., VOCs, and Form.	4
W	Drain east of Bldg. 8	B-25	PCBs,TPH-FC, Form., VOCs, and pH	None	0
X	Drain east of Bldg. 4 and old cooling tower	B-11	pH and Cr	ammon	1
Y	Storm drain near south gate	None	None	VOCs and pH	1
Z,A1,B1,C1	Storm drains outside of Bldg. 6	None	None	TPH-FC, pH, chlor., and MBAS	4
D1,E1	Storm drains southwest of Bldg. 1	None	None	chlor. and pH	2
F1,G1,H1	Storm drains north of Bldg. 7	None	None	MBAS and pH, Phosphates	3
I1	Bldg. 5 floor drain	None	None	MBAS and pH	5
J1	Bldg. 8 trench drain	None	None	TPH-FC, ammon., pH, and chlor.	3
K1	Storm drain east of Bldg. 14	None	None	chlor. and pH	1
TANKS					
Building 8	4,200-gallon Former Fuel Oil Tank Closed implaced, SW Corner of Building 8	B-16, B-29, B-43	TPH, BTEX	TPH, BTEX	5
Brine Tank	Large Brine Tank Between RR Tracks west of Caustic Unloading Area	B-8	pH, Phosphates, Chloride	pH, Phosphates, Chloride	2

Notes:
TPH-FC = Total Petroleum Hydrocarbons (Fuel Characterization) analyzed using U.S. EPA Method 8015 Modified.
Form. = Formaldehyde analyzed using Method NCASI 487.
VOCs = Volatile Organic Compounds analyzed using U.S. EPA Method 8010 or 8260.
pH=pH analyxed by U.S. EPA Method 9045
phenol. = Phenolphthalein screen.
Cr = Total chromium analyzed using U.S. EPA Method 7190.
phos. = Phosphates analyzed using U.S. EPA Method 300.
chlor. = Chlorides analyzed using U.S. EPA Method 300.
MBAS = Methylene Blue Activated Substances analyzed using U.S. EPA Method 425.1.
ammon. = Ammonia analyzed using U.S. EPA Method 350.3 (Nitrogen - Ammonia-N).
PCBs = Polychlorinated biphenyls analyzed using U.S. EPA Method 8080



LEGEND

- AREA II — PERIMETER OF AGT SAMPLE AREA
- A — SUMP, CLARIFIER, OR DRAIN DESIGNATED FOR CLOSURE SAMPLING
- CB-3 — PROPOSED CONFIRMATORY SOIL BORING LOCATION
- HA-4 — PROPOSED HAND AUGER BORING LOCATION
- MW-12 — PROPOSED GROUNDWATER MONITORING WELL LOCATION
- EB-3 — PROPOSED EXPLORATORY BORING LOCATION
- MW-6 — GROUNDWATER MONITORING WELL LOCATION
- B-44/VW-1 — EXPLORATORY BORING CONVERTED TO VAPOR EXTRACTION WELL LOCATION

SITE MAP
The Dial Corporation
Former Bleach/Soap Manufacturing Facility
9300 Rayo Avenue
South Gate, California

NORTH

0 100 200
FEET

Site Plans Sh...

FIGURE-1

Division of Drinking Water and Environmental Management—SRL (South)

Analysis Request Form

Name of Sampler: Jenny Au

Phone No: (213) 266 7576

( )

Sampler employed by: ☐ ODW

R.W.Q.C. Board No: ☒ 4 ☐ 7 ☐ 8

Sample source: Former Dial - Main Area

Date collected: 9/4/96 Analysis Task No.

Sample Type: ☐ Drinking Water : ☐ Ground water ☐ Surface water

☐ Waste water : Chlorinated ☐ Yes ☐ No

☒ Solid sample : ☒ Soil ☐ Sludge ☐ Sediment

☐ Other

Use your own bottle ID number for each bottle.

For Lab Use Log Number	Bottle ID No.	Sampling Point	Time Collected	Type of Analysis Required (Be specific)
609 8210	CU-2	"U" No. Bottom	9:40am	TPH, pH, Chloride, amonia
609 8211	CU3	"U" Sidewall	9:50am	TPH, pH, Chloride, Ammonia
609 8212	COM	"O" Bottom	10:20am	TPH, PCBs (8080)

96 OCT 29 PM 1:53

Warning or special instruction on samples:

Seals: ☐ Intact ☐ None ☒ Broken		Date	Time
Samples relinquished by	[signature]	9/4/96	3:10
Samples relinquished by			
Received for Lab by	C. Remondo	9/4/96	3:10

(For Lab use only) Total cost for laboratory analyses: 11254

State of Ca ornia - Department of Hea h Services
Division of Drinking Water & Environmental Management
Sanitation & Radiation Laboratory - South
Analytical Report

DATE REPORTED: 10/28/96

DATE RECEIVED: 9/4/96 SAMPLER: Jenny Au

Lab ID. Number	CONSTITUENT	EPA METHOD	STORET CODE	UNITS	ANALYSIS RESULTS	REPORTING LIMIT
609-8210	pH	150.1	403	Std Unit	9.6	0.1
	Chloride (Cl)	325.3	940	mg/L	97	1
	Ammonia-Nitrogen (NH3-N)	350.2	610	mg/L	4.9	0.05
609-8211	pH	150.1	403	Std Unit	9.3	0.1
	Chloride (Cl)	325.3	940	mg/L	117	1
	Ammonia-Nitrogen (NH3-N)	350.2	610	mg/L	6.0	0.05

N.D. = None detected.
mg/L = Milligram/Litre (ppm) mcg/L = Microgram/Litre (ppb)
mg/Kg = Milligram/Kilogram (ppm) mcg/Kg = Microgram/Kilogram (ppb)

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Petroleum Hydrocarbons

LAB SAMPLE ID NO.: 609-8210

DATE REPORTED : 9/6/96

All reporting units = [ ] ug/kg (ppb) [x] mg/kg (ppm)
ND = None Detected
METHOD USED : EPA 8260

Analyte	ANALYSIS RESULTS	DETECTION LIMIT
Gasoline	ND	0.5
Diesel	ND	1.0
Kerosene	ND	1.0
Naphtha	ND	0.5
Jet Fuel	ND	1.0

Comments:

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Petroleum Hydrocarbons

LAB SAMPLE ID NO.: 609-8211

DATE REPORTED : 9/6/96

All reporting units = [ ] ug/kg (ppb) [x] mg/kg (ppm)
ND = None Detected
METHOD USED : EPA 8260

Analyte	ANALYSIS RESULTS	DETECTION LIMIT
Gasoline	ND	0.5
Diesel	ND	1.0
Kerosene	ND	1.0
Naphtha	ND	0.5
Jet Fuel	ND	1.0

Comments:

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Petroleum Hydrocarbons

LAB SAMPLE ID NO.: 609-8212

DATE REPORTED : 9/6/96

All reporting units = [ ] ug/kg (ppb) [x] mg/kg (ppm)
ND = None Detected
METHOD USED : EPA 8260

Analyte	ANALYSIS RESULTS	DETECTION LIMIT
Gasoline	ND	0.5
Diesel	ND	1.0
Kerosene	ND	1.0
Naphtha	ND	0.5
Jet Fuel	ND	1.0

Comments:

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
PCB

LAB ID NO.: 609-8212 DATE REPORTED : 10-25-96

METHOD USED : EPA [ ] 508 [ ] 608 [X] 8081

All reporting units = [ ] ug/l (ppb) [X] ug/kg (ppb)

ND = None Detected

Analyte	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT [ ] X 1 [X] X 100
PCB-1016	34671	ND	0.5
PCB-1221	39488	ND	0.5
PCB-1232	39492	ND	0.5
PCB-1242	39496	ND	0.5
PCB-1248	39500	ND	0.5
PCB-1254	39504	54	0.5
PCB-1260	39508	ND	0.5
PCB-1262		ND	0.5

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

August 16, 1996

Mark Stelljes
Emcon
1433 N. Market Boulevard
Sacramento, CA 95834

FORMER DIAL FACILITY - MAIN AREA - 9300 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

We have reviewed the Workplan for Risk Evaluation of Dodecylbenzene, dated June 5, 1996, for the above mentioned site. Based upon the information submitted, we do not have any objections to the implementation of this workplan, provided the following conditions are met:

1. We require a toxicity analysis be performed for the breakdown products of dodecylbenzene.

2. Please provide a description of the model for staff's review.

3. We believe that the chemical structure for Dodecylbenzene as indicated on Page 2-1 should be $C_{12}H_{25}C_6H_5$ (attached description) and not C_6H_6-$[CH_2]_{11}$-CH_3.

4. In addition to using the 95% UCL Arithmetic Mean of the soil data, as a soil source concentration, we require that the 95th Cumulative Percentile be used as a soil source concentration.

5. We require that the input parameters for the model include a range of values rather than one specific value.

6. We require that a sensitivity analysis be performed for the site.

If you have any questions, please contact Ms. Jenny Au at (213) 266-7576.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: Mike Flack, Fugro West
John Ferguson, The Dial Corp.
John Lang, Quantum Management Group, Inc.

Th Dial Corp

5A - ?

The Dial Corp
1850 North Central Avenue
Phoenix, AZ 85077

phone 602 207 4000

CERTIFIED, RETURN RECEIPT REQUESTED

August 15, 1996

Mr. J.E. Ross, Unit Chief
c/o Rebecca Chou
California Regional Water Quality Control Board, LA Region
101 Center Plaza Drive
Monterey Park, CA 91754

Subject: South Gate, CA, Closed Plant Cleanup

Dear Ms. Chou:

This letter is to request that you change the name of the business entity on the subject matter from The Dial Corp to The Dial Corporation.

Effective as of August 15, 1996, The Dial Corp has contributed all the assets and liabilities of its Consumer Products Group, including the facilities using the listed permits, to The Dial Corporation, a Delaware corporation and, at the time of the contribution, a wholly owned subsidiary of The Dial Corp. Following the contribution, all of the common stock of The Dial Corporation was distributed as a dividend to the stockholders of The Dial Corp with the result that The Dial Corporation has become a publicly traded company independent of The Dial Corp. The Dial Corporation now owns and operates the consumer products business formerly operated by The Dial Corp, including the facilities subject to the listed permits. The Dial Corp has been renamed Viad Corp and will no longer own or operate or be responsible for the subject plants.

Thank you for making this requested change.

Sincerely,

Kenneth M. Ries
Director
Environment and Energy

KLR/tlm

STATE OF CALIFORNIA - CALIFORNIA ENVIRONMENTAL ECTION AGENCY

PETE WILSON, Governo

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

August 8, 1996

Michael E. Flack
Fugro West, Inc.
5855 Olivas Park Drive
Ventura, CA 93003-7672

FORMER DIAL FACILITY - MAIN AREA - 9300 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

We have reviewed the Response to our February 13, 1996, Comment Letter, dated May 20, 1996, Closure Plan, dated July 3, 1996, and Closure Plan Addendum, dated July 30, 1996, for the above mentioned site. Following our review, we have provided our verbal approval of the sampling strategy for the floor drains, sumps, trenches, clarifiers, and above ground storage tank areas. However, we require additional sampling and analysis in the following areas:

1. Soil samples to be collected from locations F1, G1, and H1 shall be analyzed for phosphate in addition to MBAS and pH.

2. For the Former Fuel Oil Tank at Building 8, we require one boring north of the tank and one boring east of the tank. At a minimum, soil samples shall be collected from 5 to 25 feet below ground surface at 5 foot intervals and analyzed for 8015 M and 8010 analyses. However, if Dial choose to remove the former UST, we require sidewalls and bottom samples to be collected for analyses.

In addition, we do not have any objections to the proposed confirmatory soil boring locations CB-1 through CB-3, as shown on Figure 2 in the Closure Plan.

If you have any questions, please contact Ms. Jenny Au at (213) 266-7576.

J.E. Rose, Unit Chief
Site Cleanup Unit

FAXED 8/9/96

cc: John Ferguson, The Dial Corp.
John Lang, Quantum Management Group, Inc.

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, California 93003-7672

Phone : (805) 650-7000
Telefax (805) 650-7010

		Project No.	9648-3410
		Date	august 5, 1996
		Page	1 of 7
To	California RWQCB- Site Cleanup Unit	Fax No.	213.266.7600
Attn	JENNY AU		
CC: To		Fax No.	
Attn			
From	Michael E Flack		
Subject	Dial South Gate. Addendum to Closure Plan for "Storm Water" Mangement system Elements		

Hard Copy Will Follow Via Mail: ☐ Yes ☒ No

FOR OFFICE USE ONLY

Originator Please Initial Appropriate Box Prior to Sending

☐ Return to Originator ☐ To be Filed ☐ Mail to Addressee ☐ Discard ☐ Return to Word Processing for copying, then mail

DOCUMENT2

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, CA 93003-7672
Tel: (805) 650-7000
Fax: (805) 650-7010

FILE COPY JULY 30, 1996 96-48-3410

July 30, 1996
Project No. 96-48-3410

California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Attention: Mr. Jim Ross

Subject: File No. 95-066: Closure Plan Addendum, Former Dial Main Facility, 9300 Rayo Avenue, South Gate, California

Dear Mr. Ross:

This letter serves as an addendum to the EMCON Closure Plan dated June 19, 1996, for the Dial Corp (Dial) Former Main Facility at 9300 Rayo Avenue, South Gate, California. The addendum provides a sampling and analysis plan for closure of two clarifiers and four above-ground storage tanks (AGTs) that comprise the storm water management system. These AGTs (Nos. 47, 48, 49, and 50) and waste management units (WMUs), designated as the "south gate" (designated "R" on Drawing 1) and "storm water" (designated "S" on Drawing 1) clarifiers, were not included in the June 19, 1996, closure plan for the Main Facility. Prior to initiation of site demolition, the intent was to keep the storm water management system operational during and after the buildings were removed. Dial has decided to remove the storm water management system by removing the AGTs and clarifiers and provide a rough grade for the site.

The "south gate" and "storm water" clarifiers will be removed and sampled as described in the EMCON Closure Plan of June 19, 1996. The condition of the clarifier will be noted prior to removal. Two undisturbed soil samples will be collected approximately 1 foot below each end of the clarifier using either a hand auger or directly from the backhoe bucket. Soil samples will be collected using brass rings that will be labeled with the date and time of collection, samplers initials, sample depth, and analyses required. This information along with the sample condition, such as odor and discoloration, will be noted in the field logbook. The soil samples will be placed in a chilled container for transport to California state-certified laboratory, along with the appropriate chain-of-custody documentation. Soil samples collected for closure of the clarifiers will be analyzed for the following:

- Petroleum Hydrocarbons (Fingerprint Scan), United States Environmental Protection Agency (U.S. EPA) method Modified 8015FC,
- Volatile Organic Compounds (VOCs), U.S. EPA methods 8010/8020,
- pH, U.S. EPA method 150.1,
- MBAS (surfactants), U S EPA method 425.1,
- Chloride, U.S. EPA method 300.0,
- Phosphates, U.S. EPA method 300.0.

Table 1 contained in the June 19,1996, closure plan has been revised to reflect the changes in the sampling program for closure of the "south gate" and "storm water" clarifiers.

Consistent with the approach outlined in the EMCON closure plan, the AGTs will be closed employing a two step method initiated by visual inspection of the containment followed by soil sampling after the concrete containment areas have been removed. Upon removal of the tanks, the concrete containment areas will be visually inspected for signs of a release, distress or cracking. Each area identified will be marked and checked as the concrete is removed. After removal of the concrete foundation, the soils will be visually inspected and those areas with noticeable odors or staining will be sampled. At a minimum, four soil samples will be collected below the former AGTs in the storm water retention area for analysis of the following:

- Petroleum Hydrocarbons (Fingerprint Scan), U.S. EPA method Modified 8015,
- VOCs, U.S. EPA methods 8010/8020,
- pH, U.S. EPA method 150.1,
- MBAS (surfactants), U.S. EPA method 425 1,
- Chloride, U.S. EPA method 300.0,
- Phosphates, U.S. EPA method 300.0

Soil samples will be collected approximately 3 feet below the base of the former AGT foundation slab using hand-auger equipment and driving a brass ring into undisturbed soil. The soil sample will be labeled and managed as described above for delivery to a state-certified laboratory. Table 2 contained in the June 19,1996, closure plan has been revised to reflect the changes in the sampling program for closure of the AGTs in the storm water retention area.

The closure program for waste management units and aboveground storage tanks at the Dial Main Facility is scheduled to begin during the week of August 12, 1996. We would appreciate an expedited review of the closure plan addendum, so that we may include these

additional clarifiers and aboveground storage tanks in the scheduled closure program. If you have any questions, please do not hesitate to call me at your earliest convenience. Thank you for your prompt attention to this matter and your staff's continued diligence to meet project goals.

Sincerely,

FUGRO WEST, INC.

Michael E. Flack
Manager of Geoenvironmental Services

MEF:ts

Attachment: Table 1 - Amended Sump, Clarifier, and Drain Sampling Plan
Table 2 - Amended AGT Area Soil Sampling Plan
Drawing 1 - Site Plan Showing Facilities and Aboveground Storage Tanks to be Closed

c: John Ferguson, The Dial Corp
John Lang, Quantum Management Group, Incorporated
Jenny Au, RWQCB-Los Angeles, Site Cleanup Unit

TABLE 1
Sump, Clarifier, and Drain Sampling Plan

The Dial Corporation
Main Facility, South Gate

Reference Letter	Locations	Previous Sampling Points	Previous Analysis	Proposed Closure Analysis	Number of Samples
SUMPS					
A	Pump sump next to Bldg. 2 bleach tank	B-3	TPH-FC and pH	None	0
B	Polydrum sump north of Bldg. 2 tab.	B-4	TPH-FC, Form., VOCs, pH, and phenol	None	0
C	Sump east of Bldg. 4 and old cooling tower	B-11	pH and Cr	ammon.	1
D	Drain sump by Bldg. 15	B-13	TPH-FC and Form.	TPH-FC and VOCs	2
E	Alkane unloading sump	B-15, B-22, B-24, B-42 and H-1	TPH-FC	None	0
F	Storm water sump north of Bldgs. 6 and 7	B-18	TPH-FC, pH, phos., and chlor.	None	0
G	Sump west of Bldg. 8	B-17	pH	None	0
H	Sump east of Bldg. 1	None	None	chlor.	1
I	Southern sump next to Bldg. 2 chlorine tank	None	None	chlor.	1
J	Soda ash loader sump between Bldgs. 4 and 8	None	None	pH	2
K,L,M	Bldg. 5 sumps	None	None	pH and MBAS	3
N	Sump north of AST farm weigh station	None	None	pH, chlor., ammon., and TPH-FC	1
O	Sump south of AST farm weigh station	None	None	pH, chlor., ammon., and TPH-FC	1
P	Sump inside Bldg. 8	None	None	pH, chlor., ammon., and TPH-FC	1
CLARIFIERS					
Q	Clarifier between Bldgs. 2 and 14	B-1	PCBs, TPH-FC, Form., VOCs, pH, Cr, phos., and chlor.	VOCs	2
R	Clarifier near south gate	B-9	TPH-FC and pH	TPH-FC, VOCs, pH, MBAS, chlor, phos	2
S	Clarifier near storm water retention tanks	B-14	PCBs, TPH-FC, VOCs, and pH	TPH-FC, VOCs, pH, MBAS, chlor, phos	2
T	Clarifier southeast of Bldg. 15	B-13	TPH-FC and Form.	VOCs and TPH-FC	2
U	Clarifier east of Bldg. 8	None	None	pH, chlor, ammon., and TPH-FC	2

TABLE 1
Sump, Clarifier, and Drain Sampling Plan

The Dial Corporation
Main Facility, South Gate

Reference Letter	Locations	Previous Sampling Points	Previous Analysis	Proposed Closure Analysis	Number of Samples
DRAINS					
V	Trench drain between Bldgs. 1 and 14	B-2 and B-1	pH, Cr, phos., chlor., PCBs, TPH-FC, and Form.	chlor., ammon., VOCs, and Form.	4
W	Drain east of Bldg. 8	B-25	PCBs, TPH-FC, Form., VOCs, and pH	None	0
X	Drain east of Bldg. 4 and old cooling tower	B-11	pH and Cr	ammon.	1
Y	Storm drain near south gate	None	None	VOCs and pH	1
Z,A1,B1,C1	Storm drains outside of Bldg. 6	None	None	TPH-FC, pH, chlor., and MBAS	4
D1,E1	Storm drains southwest of Bldg. 1	None	None	chlor. and pH	2
F1,G1,H1	Storm drains north of Bldg. 7	None	None	MBAS and pH	3
I1	Bldg. 5 floor drain	None	None	MBAS and pH	5
J1	Bldg. 8 trench drain	None	None	TPH-FC, ammon., pH, and chlor.	3
K1	Storm drain east of Bldg. 14	None	None	chlor. and pH	1

Notes:
TPH-FC = Total Petroleum Hydrocarbons (Fuel Characterization) analyzed using U.S. EPA Method 8015 Modified.
Form. = Formaldehyde analyzed using Method NCASI 487.
VOCs = Volatile Organic Compounds analyzed using U.S. EPA Method 8010 or 8260.
phenol. = Phenolphthalein screen.
Cr = Total chromium analyzed using U.S. EPA Method 7190
phos. = Phosphates analyzed using U.S. EPA Method 300.
chlor. = Chlorides analyzed using U.S. EPA Method 300.
MBAS = Methylene Blue Activated Substances analyzed using U.S. EPA Method 425.1
ammon. = Ammonia analyzed using U.S. EPA Method 350.3 (Nitrogen - Ammonia-N)
PCBs = Polychlorinated biphenyls analyzed using U.S. EPA Method 8080.

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

Refer reply to:

HEALTH HAZARDOUS MATERIALS DIVISION
5825 Rickenbacker Rd
Commerce CA 90040-3027

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

July 30, 1996

Jim Ross
Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754

Dear Mr. Ross:

SUBJECT: **DIAL CORPORATION/PUREX LOCATED AT 9300 RAYO AVENUE, SOUTH GATE, 90280.**

This letter is to confirm the telephone conversation held on June 10, 1996, between Judy Watkins of this Department and Jenny Au of your staff regarding the subject location.

As a result of the above conversation, it was mutually agreed that your department has assumed lead agency status for the above subject site. Justification for this decision was based on findings from a subsurface investigation, "Remedial Action Plan for Hydrocarbon Impacted Soils," which indicated gasoline and volatile organic compounds have impacted deep soils at the site. From these results, sufficient evidence exists of groundwater impact to refer the matter to your department.

This Department requests your office and/or Dial Corporation to provide this office with all future site investigation reports.

If you have any questions, please feel free to call Judy Watkins at (213) 890-4116.

Very truly yours,

THOMAS W. KLINGER, SUPERVISOR
SITE MITIGATION UNIT
HEALTH HAZARDOUS MATERIALS DIVISION

TK:jw

c: Au, RWQCB
Bonds, EMCON
Sampat, Dial Corporation

FUGRO WEST, INC.

5855 Olivas Park Drive
Ventura, CA 93003-7672
Tel: (805) 650-7000
Fax: (805) 650-7010

July 26, 1996
Project No. 96-48-3410

California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Attention: Ms. Jenny Au

Subject: Dial South Gate, Main Area (File No. 95-066)

Dear Ms. Au:

This letter provides written notification to the California Regional Water Quality Control Board (RWQCB) of changes in the project oversight responsibilities and consulting services for the Dial Corp, Former Main Area and South Lot sites at 9300 and 9400 Rayo Avenue, South Gate, California. Project management and technical consulting services for closure of the Main Facility soil and ground water and oversight of the Dial South Parking Lot will be the responsibility of:

Fugro West, Inc.
5855 Olivas Park Drive
Ventura, California 93003-7672
Project Manager: Michael Flack
(805) 650-7000

Completion of the "Risk Evaluation of Dodecylbenzene Using Structure-Activity Relationships" for closure of the dodecylbenzene-impacted soils in the area of the alkylate unloading sump will be the responsibility of:

EMCON
1433 North Market Boulevard
Sacramento, California 95834-1943
Project Manager: Mark Stelljes
(916) 928-3391, ext. 311

Written comments to the risk assessment workplan dated June 6, 1996, for the dodecylbenzene-impacted soils should be directed to EMCON with copies to Dial and Quantum Management Group Inc., personnel and Fugro. Comments and directives on all other aspects of

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FUGRO

the closure of the Main facility, including the closure plan, should be forwarded to Fugro with the appropriate copies to Dial and the Quantum Management Group.

If you have any questions regarding the responsibilities assigned by Dial for closure of the Main Facility please do not hesitate to call me at your earliest convenience.

Sincerely,

FUGRO WEST, INC.

Michael E. Flack
Manager of Geoenvironmental Services

MEF:ts

c: John Ferguson, The Dial Corp
John Lang, Quantum Management Group, Inc.
Mark Stelljes, EMCON-Sacramento

RCA 204-47

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

95 JUL -5 AM 11:23

July 3, 1996
Project 22205-401.010

Mr. J.E. Ross
Chief, Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Closure Plan, The Dial Corporation, Main Facility, 9300 Rayo Avenue, South Gate, California

Dear Mr. Ross:

EMCON, on behalf of the Dial Corporation (Dial), has prepared the attached closure plan for the Dial Corporation (Dial) Main Facility at 9300 Rayo Avenue in South Gate, California. The scope of work includes closing waste management units (WMUs) such as sumps, clarifiers, and above-ground storage tank (AGT) containment areas; installing monitoring wells and drilling soil borings. The scope of work follows the closure strategy outlined in EMCON's May 20, 1996, letter to the California Regional Water Quality Control Board (RWQCB). The RWQCB has verbally indicated that the sampling strategy presented in the May 20, 1996, letter is sufficient for closure of the Main Area. In addition to the closure of the AGTs and WMUs at the Main Area property, a soil boring program is presented to close the soil vapor extraction system in the area of the former garage and laboratory.

The elements of the risk assessment program to address the dodecylbenzene-impacted soil in the alkylate unloading area are not presented in this workplan. As discussed in our May 8, 1996, meeting, the risk assessment program will be administered apart from the elements of the closure sampling for the Main Area. However, the sampling program for analysis of the physical characteristics of soil in the area of the former alkylate unloading sump is presented in this workplan.

RA is for establishing cleanup level for [illegible] not having area

JE

r:\dial\coverlet.doc

EMCON will begin the closure activities following your approval of this closure plan. If you have questions, please call.

Sincerely,

EMCON

for Michael E. Flack
Project Manager

cc: Ms. Jenny Au, Los Angeles Regional Water Quality Control Board
Mr. John Ferguson, Dial Corporation
Mr. John Lang, Quantum Management Group, Incorporated

EMCON
1433 North Market Boulevard • Sacramento, California 95834-1943 • (916) 928-3300 • Fax (916) 928-3341

96 JUN 10 PM 1:03

June 6, 1996
Project 20H93-001.06

Mr. J.E. Ross, Unit Chief
c/o Rebecca Chou
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754

Re: Former Dial Facility - Main Area Dodecylbenzene Workplan

Dear Mr. Ross:

Enclosed are two (2) copies of the Workplan for Risk Evaluation of Dodecylbenzene by Quantitative Structure-Activity Relationships, prepared for the former dial facility in Southgate, California, for your review. This workplan was prepared as agreed in our meeting of May 8. We would appreciate an expedited review of this workplan so that we may proceed with the assessment as soon as possible to reach closure on the dodecylbenzene issue.

Please do not hesitate to call either of the undersigned if you have any questions about this workplan.

Sincerely,

EMCON

Mark E. Stelljes, Ph.D.
Risk Assessment and Toxicology Manager

David Jeffrey, Ph.D.
Environmental Chemist

Attachments: Workplan for Risk Evaluation of Dodecylbenzene by Structure-Activity Relationships

cc: Jenny Au, RWQCB
John Ferguson, The Dial Corp
John Lang, Quantum Management Group, Inc.
Mike Flack, EMCON

SACU:\DIAL\CVRLTR.DOC-96\mes:1

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

February 23, 1996
Project 0H93-001.006

Mr. Jim Ross
Section Chief - Site Clean Up Unit
California Regional Water Quality Control Board - Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: File No. 95-066: Remediation Progress Update (December 1995)
Former Dial Corporation Facility
9300 East Rayo Avenue, South Gate

Dear Mr. Ross:

EMCON is providing this report summarizing the vapor extraction system (VES) operation at the referenced Dial Corporation (Dial) Facility in South Gate for the period of November 30 to December 18, 1995. The VES consists of seven vapor extraction wells (or well nests) connected to a Stealth Industries 250 cfm thermal/catalytic oxidizer (SI 250). The VES was started on January 26, 1995. The active remediation by vapor extraction and destruction by oxidation was completed on December 18, 1995.

VES OPERATIONAL DATA

The following table summarizes the monitoring data for the period.

Cumulative Operational Time (hours)/days	7,097 / 326
Percent Operational Time this Period/project	100% / 91%
Inlet TVH Concentrations (ppmv)/highest	470 / 4,500
Inlet Benzene Concentration (ppmv)/highest	ND / 52
Cumulative TVH Pounds Removed (lbs)	21,427
Cumulative Benzene Pounds Removed (lbs)	106

Since the start-up the system has operated for 326 days and has operated 7,097 hours. The SI 250 has been 91 percent operational from the start-up on January 1995. The system has operated for 18 days in this reporting period. Intake vacuums have ranged 42 inches of water (w.c.) to 82 inches w.c. as wells have been opened and closed. During this period the process flow rate extracted from the well field ranged from 40 cubic feet per minute (cfm) to 122 cfm.

The volatile organic compound (VOC) concentrations in the vapor stream are measured by a photoionization detector (PID) calibrated to isobutylene. During this reporting period VOC readings measured in the influent before dilution ranged from 312 parts per million by volume (ppmv) to 570 ppmv. Effluent VOC readings ranged from 4 ppmv to 16.7 ppmv, which is below the permitted effluent VOC reading of 50 ppmv. See Table 1 for a complete summary of the vapor extraction system operating data.

Beginning in mid-March 1995, during weekly site visits, those wells that showed poor production were shutdown to optimize recovery and to maintain an optimal mass removal rate. Wells are closed as they show declining vapor concentrations measured in the field with a photoionization detector. Wells VW-2, VW-3B, VW-4B, VW-5A and VW-5B are showing declining PID readings (50 to 490 ppmv). Since March, 1995 these wells have been periodically closed to maximize the removal of petroleum hydrocarbons from wells VW-1, VW-3A and VW-4A. Each well is monitored for oxygen, carbon dioxide, vacuum, PID readings, and vapor flow.

During August 1995, in an effort to maximize hydrocarbon extraction rates, EMCON focused extraction efforts from the remaining wells that produced the highest vapor concentrations (VW-1, VW-3A).

REPORTING PERIOD SAMPLE RESULTS

For this reporting period, one influent sample (before dilution) was collected and delivered to a state certified laboratory for analysis of volatile petroleum hydrocarbons content (C5-C12 range). The concentration of TVH as gasoline in this vapor sample was reported to be 470 ppmv (November 20, 1995). The concentration of benzene was reported as not detectable. The historic VES analytical data since startup in early 1995 is summarized in Table 2 and graphically represented in Charts 1, 2, and 3.

The certified analytical reports (CARs) for the vapor samples collected over this reporting period are presented in Attachment 1.

VAPOR EXTRACTION SYSTEM PERFORMANCE

To date approximately 21,427 pounds (lbs) of total volatile hydrocarbons (TVH) as gasoline (C5-C12 range) and approximately 106 lbs of benzene have been extracted from the wells and oxidized by the SI 250 unit in 7,097 hours of operation (Table 3, Charts 1 and 2). Over the reporting period the SI 250 operational uptime was 100 percent.

The remedial effort, including the internal combustion engine (ICE 12,847 lbs) operational in the fourth quarter of 1993 and the SI 250, has removed 34,274 lbs of TVH as gasoline. The highest TVH concentration recorded during the remedial efforts was

36,000 ppmv during the four quarters of 1993, and the latest (November 20, 1995) TVH concentration was 470 ppmv. Since the startup of the remediation system in early 1995, the concentration of benzene in extracted vapors has been reduced from 52 ppmv to not detectable concentrations (Figure 2).

FEASIBILITY OF IN SITU BIOREMEDIATION

The percent of oxygen in the subsurface vapor has shown a gradual increase since the outer wells have been open to the atmosphere. This infiltration of oxygen aids in the removal of petroleum hydrocarbons by biological remediation. The process of aerobic bioremediation appears to be occurring in the subsurface. During aerobic bioremediation, a biomass uptakes oxygen, nutrients, and the petroleum hydrocarbons to produce energy. The biomass will release carbon dioxide as a waste product. Monitoring results have shown elevated carbon dioxide and lowered oxygen readings in samples from wells VW-1, VW-2, VW-4B, and VW-5B, indicating aerobic bioremediation.

Between October 27 to November 3, 1995 EMCON performed an in-situ respirometry test at the site. This test was performed to estimate rates of destruction of petroleum hydrocarbons by in-situ bioremediation. During the test, the vapor extraction wells were periodically purged and sampled for carbon dioxide, oxygen, and VOC. Following the field work the data were evaluated to determine bioremediation activity. This data may be used to support a remedial program based on natural attenuation of hydrocarbons in the subsurface through a mechanism of intrinsic bioremediation. An option for natural attenuation may be needed, if SVE is not completely effective in removing all hydrocarbons sorbed to the soils in the area of the former garage and underground storage tanks.

The data from the in-situ respirometry test was used to calculate the oxygen utilization. The rates were calculated as percent oxygen verses time. The oxygen utilization rate was determined as the slope of the percent oxygen versus time. Zero-order respiration rates are typical. Table 4 summarizes the data from the in-situ respirometry test, and Figures 4 and 5 are graphical representations.

Biodegradation rates of petroleum hydrocarbons can be determined from the oxygen utilization rates and the stoichiometric relationship from the oxidation of hydrocarbons. Hexane is used as the representative hydrocarbon to determine the degradation rates by the following stoichiometric relationship.

$$C_6H_{14} + 9.5\,O_2 \rightarrow 6\,CO_2 + 7\,H_2O$$

Based on the utilization rates (Figures 4 and 5), the biodegradation rate was estimated by the following equation.

$K_B = -K_O * A * D_O * C/100$

where:

K_B = biodegradation rate (mg/kg day) (hexane equivalent per kg of soil per day)

K_O = oxygen utilization rate (percent per day)

A = volume of air/kg of soil (L/kg)

D_O = density of oxygen gas (mg/L)

C = mass ratio of hydrocarbons to oxygen required for mineralization

Following the in-situ respirometry test, wells VEW-1 and VW-3B were analyzed for the biodegradation rates. VEW-1 with an oxygen utilization rate of 3.12 percent per day had a biodegradation rate of 0.02 mg of hexane equivalent per 1 kilogram of soil per day. See Calculation Sheet 1. VW 3B with an oxygen utilization rate of 1.30 percent per day had a biodegradation rate of 0.01 mg of hexane equivalent per 1 kilogram of soil per day. See Calculation Sheet 2. Based on the results of the in-situ respirometry test a passive bioremediation program is an appropriate alternative for the removal of the residual hydrocarbon impacts, should additional remediation be required.

The SVE has shown a steady removal of volatile hydrocarbon compounds since startup in January 1995. Based on the declining TVH and the not detectable benzene concentrations in the extracted vapor, the SVE has achieve its engineered efficiency. On December 18, 1995, EMCON shut off the SVE because it was not cost effective in removing volatile hydrocarbons. A confirmatory soil boring program will be proposed to assess the effectiveness of the VES. Closure of the VES will be requested based on the result of the confirmatory boring program. If you have any questions or comments regarding this report please do not hesitate to call.

Sincerely,

EMCON

Gregory V. Coppola
Project Engineer

Michael E. Flack, R.G. 5473
Project Manager

Attachments: Abbreviations and Notes
Table 1 - Vapor Extraction System Operation Data
Table 2 - Laboratory Analytical Results of Extracted Vapors
Table 3 - Benzene and TVH Gasoline Mass Removal Data
Table 4 - In-Situ Respirometry Test Data
Figure 1 - TVH Concentration and Mass Removed vs. Operating Hours
Figure 2 - Benzene Concentration and Mass Removed vs. Operating Hours
Figure 3 - BTEX Concentration vs. Operating Hours
Figure 4 - VEW-1 In-Situ Respirometry Data
Figure 5 - VW-3B In-Situ Respirometry Data
Calculation Sheet 1 - VEW-1 Biodegradation Rate
Calculation Sheet 2 - VW-3B Biodegradation Rate
Attachment 1 - Certified Analytical Reports

cc: John Lang, Quantum Management Group, Inc.
Michael Cavanaugh, Dial Corp.
Jenny Au, California Regional Water Quality Control Board - Los Angeles Region

ABBREVIATIONS AND NOTES

The following is an explanation of the abbreviations and notes used in the attached tables and figures.

Abbreviations:

HRS	-	Hours
N/M	-	Not Measured
SCFM	-	Standard Cubic Feet Per Minute
in. w.c.	-	Inches of Water Column
°F	-	Degrees Fahrenheit
ppmv	-	parts per million by volume
vol %	-	percent by volume
%	-	percent
lbs	-	pounds

Notes:

(1) Cumulative Operating Hours - The Cumulative Operating Hours are the hours the SVE system has been in operation.

(2) Process Flow Rate/Total Flow Rate - Total flow and processing flow is measured by pressure flow elements. The total flow rate is the flow that enters the oxidizer. Process flow rate is the flow coming from the wells.

(3) Inlet vacuum is measured by EMCON, and represents the vacuum that is applied to the well field.

(4) Temperatures are measured via thermocouples in the Stealth unit.

(5) VOC is measured by EMCON using a portable photoionization detector.

(6) Oxygen is measured by EMCON using field instrumentation.

(7) LEL is measured by the Stealth. The MSA LEL sensor is calibrated regularly.

(8) Concentrations of specific compounds are analyzed by certified laboratories. The samples are handled under strict chain-of-custody. Please see laboratory analytical reports for specific methods and detection limits.

(9) Mass removal data is the total pounds of the constituent removed during the operation of the Stealth 250.

TABLES

Table 1
Vapor Extraction System Operating Data
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Total Flow Rate (SCFM) (2)	Inlet Vacuum (in. W.C.) (3)	Exhaust Temperature (°F) (4)	Process Temperature (°F) (4)	Inlet VOC -before dilution- (ppm) (5)	Inlet VOC -after dilution- (ppm) (5)	Effluent VOC (ppm) (5)	Oxygen Level (vol %) (6)	LEL Level (%) (7)
1/26/95	0.1	258	321	11	639	688	2068	557	50.7	18.7	14.9
2/1/95	54.3	159	N/O	53	1451	1324	2500	2500	0	11	34.9
2/8/95	219.8	162	N/O	53	1342	1460	N/M	N/M	N/M	13.9	39.7
2/15/95	373.1	103	113	47	1269	1462	8910	562	23	17.5	23.5
2/22/95	539.6	120	N/O	62	1332	1448	N/M	N/M	N/M	17.2	31.8
3/1/95	701.2	47	N/O	50	1330	1448	720	560	12.5	19.2	22.1
3/6/95	748.9	108	N/O	28	1404	1460	460	400	10.6	18.9	12.9
*	750.4	95	N/O	28	1350	1460	472	408	10.2	18.7	15.6
3/8/95	797.3	152	N/O	58	1335	1552	343	510	14.6	15.9	29.2
3/14/95	936	92	154	46.2	1352	1468	885	720	20.8	17.4	24.1
3/22/95	1070.3	52	152	42.6	1340	1450	1218	932	4.6	20.4	22.8
3/28/95	1211.2	35	151	48	1311	1460	813	539	0	19.5	22
4/4/95	1378.2	44	144	46	1306	1446	880	580	20.3	19.7	14.8
4/5/95	1400.2	36	142	51	1330	1450	677	551	19.9	16.9	25.2
4/11/95	1546.2	N/M	N/O	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
4/18/95	1712.8	N/M	N/O	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
5/4/95	2048.5	196	163	74	743	692	315	300	11	20.7	8.1
5/11/95	2213.2	185	147	88	803	722	286	280	18	20.9	8.9
5/18/95	2383.8	188	188	88	724	788	188	179	11.4	20.9	9
5/23/95	2502.9	130	130	69	857	874	863	859	11.6	20.9	9.5
6/2/95	2744.8	139	N/O	62	776	760	789	782	9.5	21.3	10.4
6/6/95	2842	58	N/O	34	720	702	1644	513	9.6	20.1	10.1
6/12/95	2983.8	95	154	56	707	688	1360	791	15.6	18.7	19.1
6/20/95	3172.8	85	112	92	892	893	780	79	16.4	20.9	13.7
6/26/95	3321.1	95	128	76	800	770	1724	1395	7.9	20.6	19.8
7/6/95	3556.4	130	117	53	670	658	2360	2360	20.5	20.8	14.16
7/10/95	3654.8	140	N/O	56	674	661	2230	2230	18.6	20.8	13.9
7/17/95	3823.4	142	148	58	678	664	123	123	10.3	21	14.5
7/24/95	3988.2	128	N/O	62	677	660	560	570	9.2	20.7	4.7
7/31/95	4155.4	75	140	62	689	684	870	554	6.7	21	12.8
8/7/95	4325.2	115	175	90	675	660	680	444	11.6	20.8	9.3
8/14/95	4490.9	104	164	94	674	664	660	450	11.2	18.5	10.2
8/23/95	4716.4	117	155	90	659	652	260	209	21	20.38	10.67
8/31/95	4883.2	158	212	100	595	650	566	519	8.7	19.13	15.35
9/7/95	5008.5	164	103	90	683	655	452	448	16.2	14	23.53
9/11/95	5102.6	135	N/O	92	743	731	587	553	5.1	14.47	20.92

Table 1
Vapor Extraction System Operating Data
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Total Flow Rate (SCFM) (2)	Inlet Vacuum (in. W.C.) (3)	Exhaust Temperature (°F) (4)	Process Temperature (°F) (4)	Inlet VOC -before dilution- (ppm) (5)	Inlet VOC -after dilution- (ppm) (5)	Effluent VOC (ppm) (5)	Oxygen Level (vol %) (6)	LEL Level (%) (7)
9/18/95	5268.8	109	N/O	74	666	737	975	956	11.6	14.5	21
9/25/95	5444.1	115	N/O	82	684	779	454	390	2.3	21	13.03
10/2/95	5612.3	125	N/O	78	636	759	320	305	6.5	21.78	14.37
10/9/95	5783.2	101	N/O	86	699	801	346	335	7.6	21.4	14.96
10/16/95	5948.3	87	N/O	86	703	821	270	240	2.1	21.21	16.38
10/23/95	6114.2	114	N/O	86	709	839	240	239	3.4	21.42	16.36
11/18/95	6323.9	124	N/O	60	605	670	170.6	163.9	3.6	20.64	20.6
11/20/95	6423.2	115	N/O	60	602	670	150	148	2.8	20.45	21.56
11/27/95	6592.9	137	N/O	60	593	680	120	118	1.6	20.98	21.14
12/1/95	6684.9	122	N/O	61	613	679	394	428	16.7	20.8702	16.51
12/4/95	6760.8	82	N/O	80	650	756	482	340	12	21.1502	16.54
12/11/95	6928.7	67	N/O	82	653	765	820	570	4	20.9702	17.44
12/18/95	7097.3	40	N/O	42	562	675	510	312	4.5	21.2402	18.15

Table 2
Laboratory Analytical Results of Extracted Vapors
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Sampling Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Benzene (ppmv) (8)	Toluene (ppmv) (8)	Ethylbenzene (ppmv) (8)	Total Xylenes (ppmv) (8)	Total Volatile Hydrocarbons (ppmv) (8)	C1 to C4 Hydrocarbons (ppmv) (8)	C5 to C8 Hydrocarbons (ppmv) (8)	C9 to C12 Hydrocarbons (ppmv) (8)	TVH Gasoline C5 to C12 (ppmv) (8)
2/1/95	54.3	159	52	83	31	100	4600	310	3000	1400	4400
2/8/95	219.8	162	40	81	18	105	3600	1100	2500	0	2500
3/28/95	1211.2	35	27	100	36	120	4600	100	2700	1800	4500
5/11/95	2213.2	185	10	41	23	78	2200	64	950	1200	2200
6/6/95	2842	58	16	67	41	130	3300	39	1600	1700	3300
7/6/95	3556.4	130	2	13	10	33	730	12	270	450	720
8/23/95	4716.4	117	2.3	16	13	43	1100	25	420	670	1100
10/9/95	5783.2	101	0	11	9.8	34	740	15	270	450	720
11/20/95	6423.2	115	0	5.3	5.9	18	470	11	170	290	460

Table 3
Benzene and TVH Gasoline Mass Removal Data

In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Sampling Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Benzene (ppmv) (8)	C5-C12 TVH Gasoline (ppmv) (8)	Benzene Mass Removed (lbs) (9)	TVH Gasoline (C5-C12) Mass Removed (lbs) (9)
2/1/95	54.3	159	52	4400	0	0
2/8/95	219.8	162	40	2500	15	1378
3/28/95	1211.2	35	27	4500	55	6519
5/11/95	2213.2	185	10	2200	81	12072
6/6/95	2842	58	16	3300	93	15232
7/6/95	3556.4	130	2	720	100	17262
8/23/95	4716.4	117	2.3	1100	104	19222
10/9/95	5783.2	101	0	720	106	20814
11/20/95	6423.2	115	0	460	106	21427

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-1

Time	Carbon Dioxide	Oxygen	PID
-50.00	1.2	16.5	780
0.01	0.1	20.3	185
0.75	0.2	20.2	310
1.75	0.3	19.8	431
2.75	0.4	19.9	539
3.75	0.4	19.7	562
4.75	0.6	19.4	618
5.50	0.6	19.4	642
24.00	0.6	19.2	870
72.00	1.5	11.5	632
96.00	3	6.7	1012

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-2

Time	Carbon Dioxide	Oxygen	PID
-50.00	0.4	19.9	13
0.01	0	20.6	6.1
0.75	0	20.7	2.4
1.75	0	20.6	6.5
2.75	0	20.8	3.5
3.75	0	20.8	4.2
4.75	0	20.6	6.2
5.50	0	20.6	7.2
24.00	0	20.4	13.8
72.00	0	20.5	8.4
96.00	0	20.7	14.9

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-3A

Time	Carbon Dioxide	Oxygen	PID
-50.00	0.4	20.1	736
0.01	0	20.7	10.3
0.75	0	20.8	23.1
1.75	0	20.8	44.7
2.75	0	21	58.9
3.75	0	20.7	64.3
4.75	0	20.4	69.3
5.50	0	20.6	56.2
24.00	0	20.8	42.6
72.00	0.1	20	101
96.00	0.1	19.8	130

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-3B

Time	Carbon Dioxide	Oxygen	PID
-50.00	0	20.8	362
0.01	0	20.7	4.4
0.75	0	20.8	3.3
1.75	0	20.7	11.3
2.75	0	21	6.3
3.75	0	20.7	6.9
4.75	0	20.4	7.2
5.50	0	20.7	7.8
24.00	0	20.7	6.2
72.00	0.8	16.3	23.2
96.00	1.1	16.1	31.8

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-4A

Time	Carbon Dioxide	Oxygen	PID
-50.00	0	20.4	13.3
0.01	0	20.6	2
0.75	0	20.7	3.3
1.75	0	20.7	7.1
2.75	0	20.9	5.9
3.75	0	20.8	3.4
4.75	0	20.3	3.8
5.50	0	20.8	4.2
24.00	0	20.7	6.2
72.00	0	20.4	13
96.00	0	20.2	8.6

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-4B

Time	Carbon Dioxide	Oxygen	PID
-50.00	0	20.6	7.7
0.01	0	20.7	2.2
0.75	0	20.7	2.5
1.75	0	20.7	3.8
2.75	0	20.9	2.2
3.75	0	20.8	2.2
4.75	0	20.2	2.2
5.50	0	20.7	2.2
24.00	0	20.7	4.8
72.00	0	20.6	6.9
96.00	0	20.6	9.8

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

VEW-5A

Time	Carbon Dioxide	Oxygen	PID
-50.00	0	20.5	2.2
0.01	0	20.7	4
0.75	0	20.7	4.5
1.75	0	20.8	7.3
2.75	0	21	5.4
3.75	0	20.9	4
4.75	0	20.6	4.8
5.50	0	20.6	5.3
24.00	0	20.6	6
72.00	0	20.5	6
96.00	0	20.5	11.2

Table 4
In-situ Respirometry Test Data
Former Dial Facility
South Gate, California

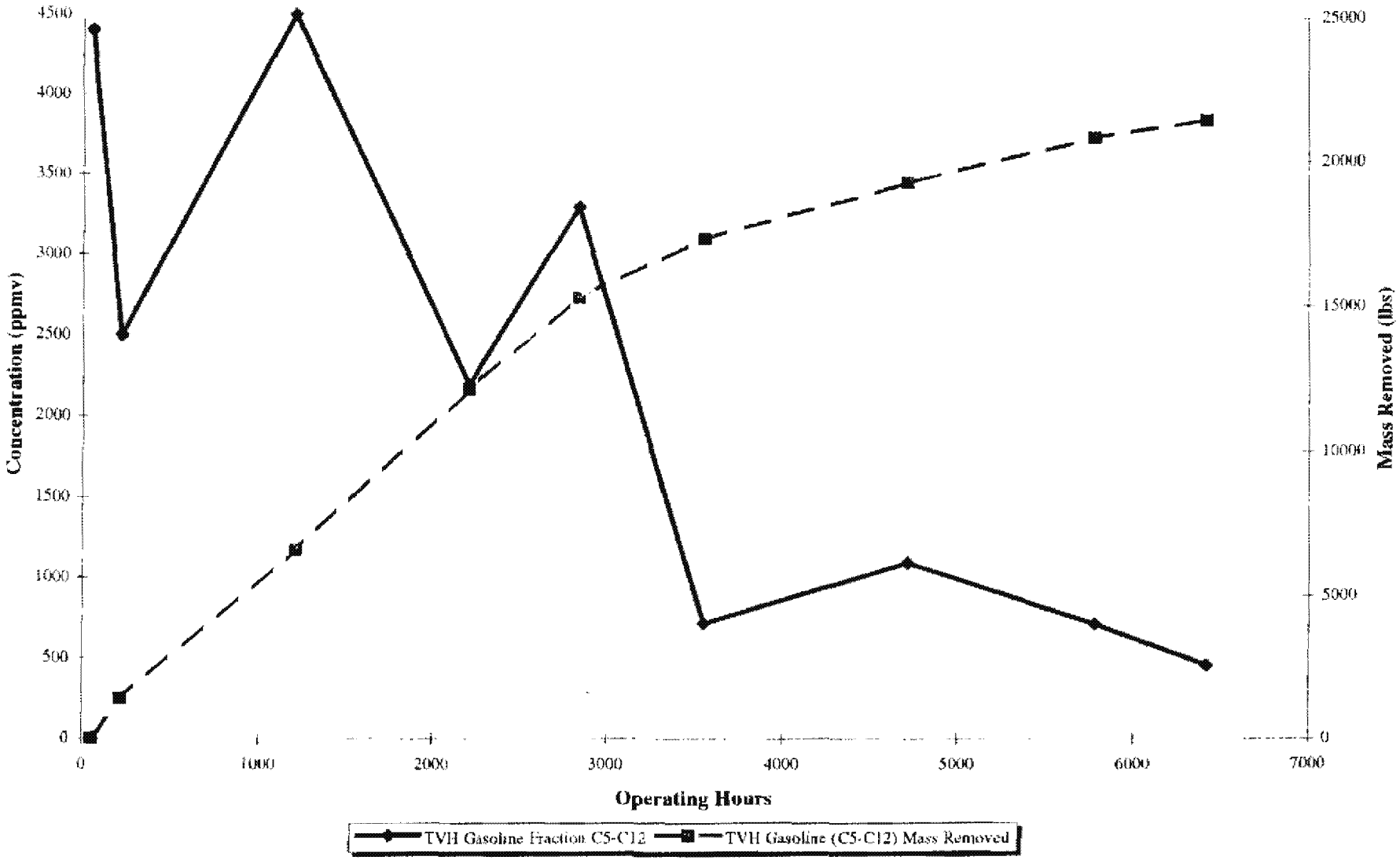
VEW-5B

Time	Carbon Dioxide	Oxygen	PID
-50.00	0	20.7	7.9
0.01	0	20.6	4.6
0.75	0	20.8	5.3
1.75	0	20.8	8
2.75	0	21	7.6
3.75	0	20.9	8.2
4.75	0	20.6	10.3
5.50	0	20.6	10
24.00	0	20.6	8.2
72.00	0	20.2	7
96.00	0	20.2	11.4

FIGURES

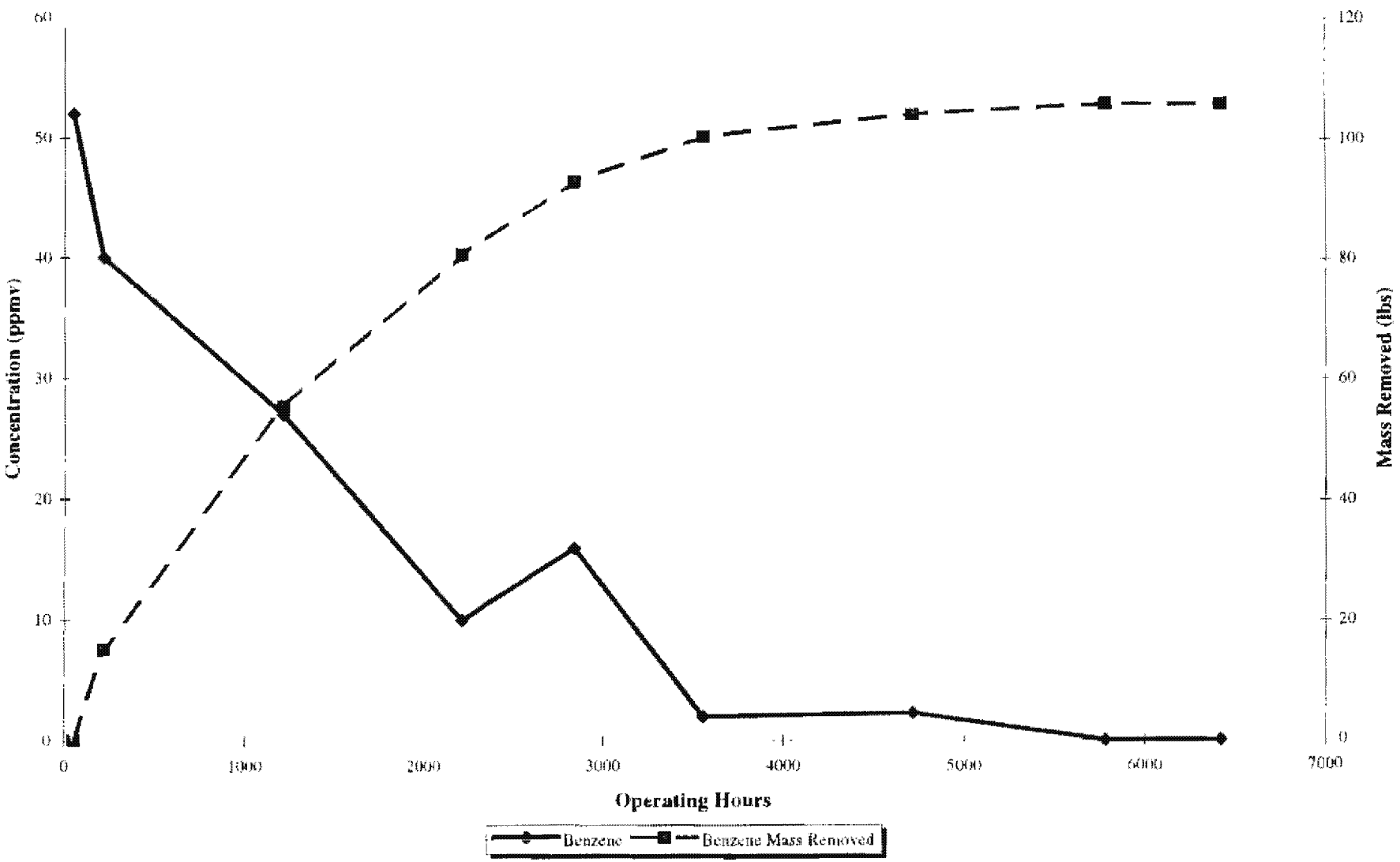
2/1/96
0H93-001.006

Figure 1
TVH Concentration and Mass Removed
vs. Operating Hours
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California



2/1/96
0H93-001.006

Figure 2
Benzene Concentration and Mass Removed
vs. Operating Hours
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California



2/1/96
OH93-001.006

Figure 3
BTEX Concentration vs Operating Hours
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

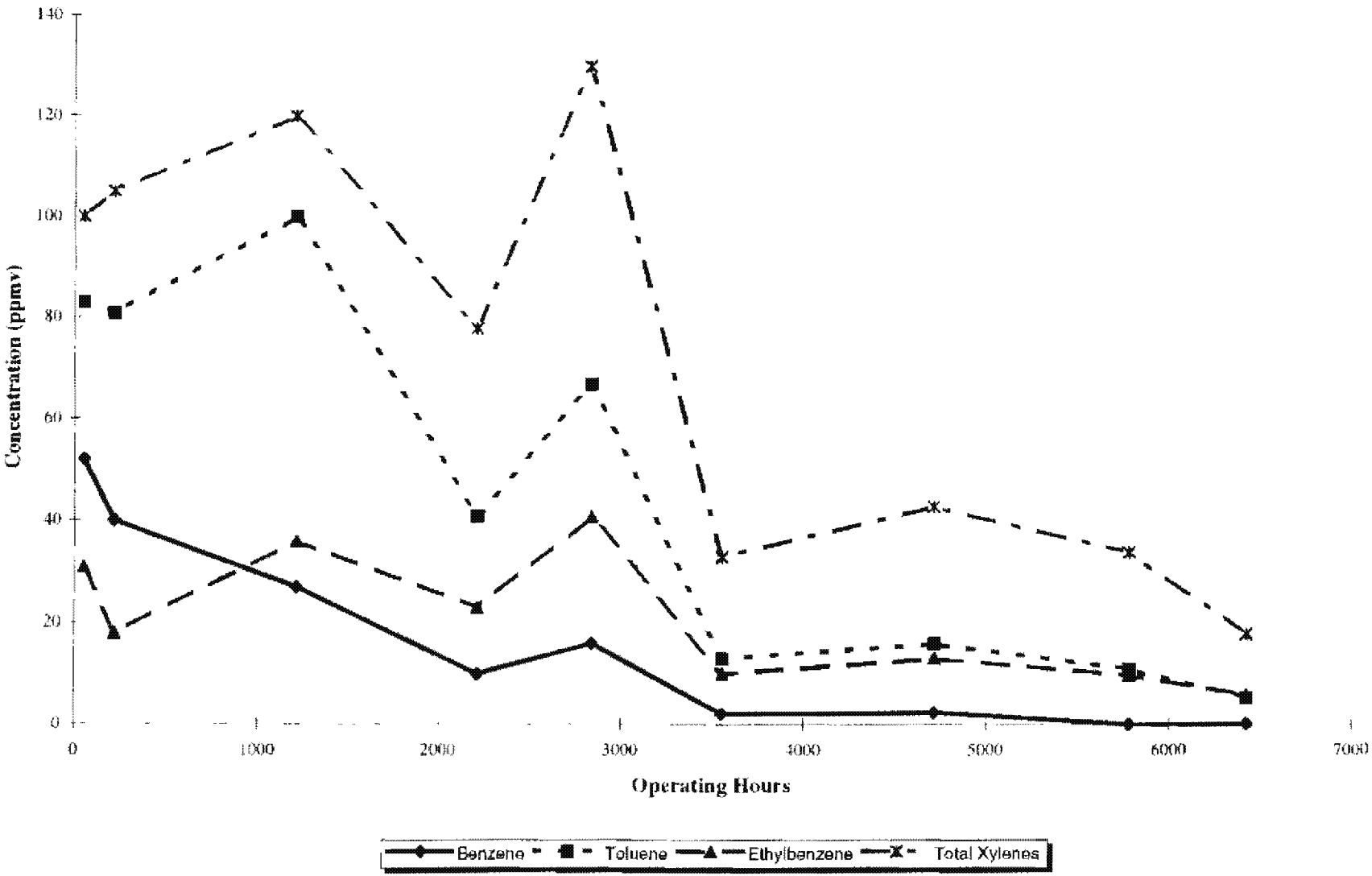


Figure 4
In-Situ Respirometry Test Data VEW-1
Former Dial Facility
South Gate, California

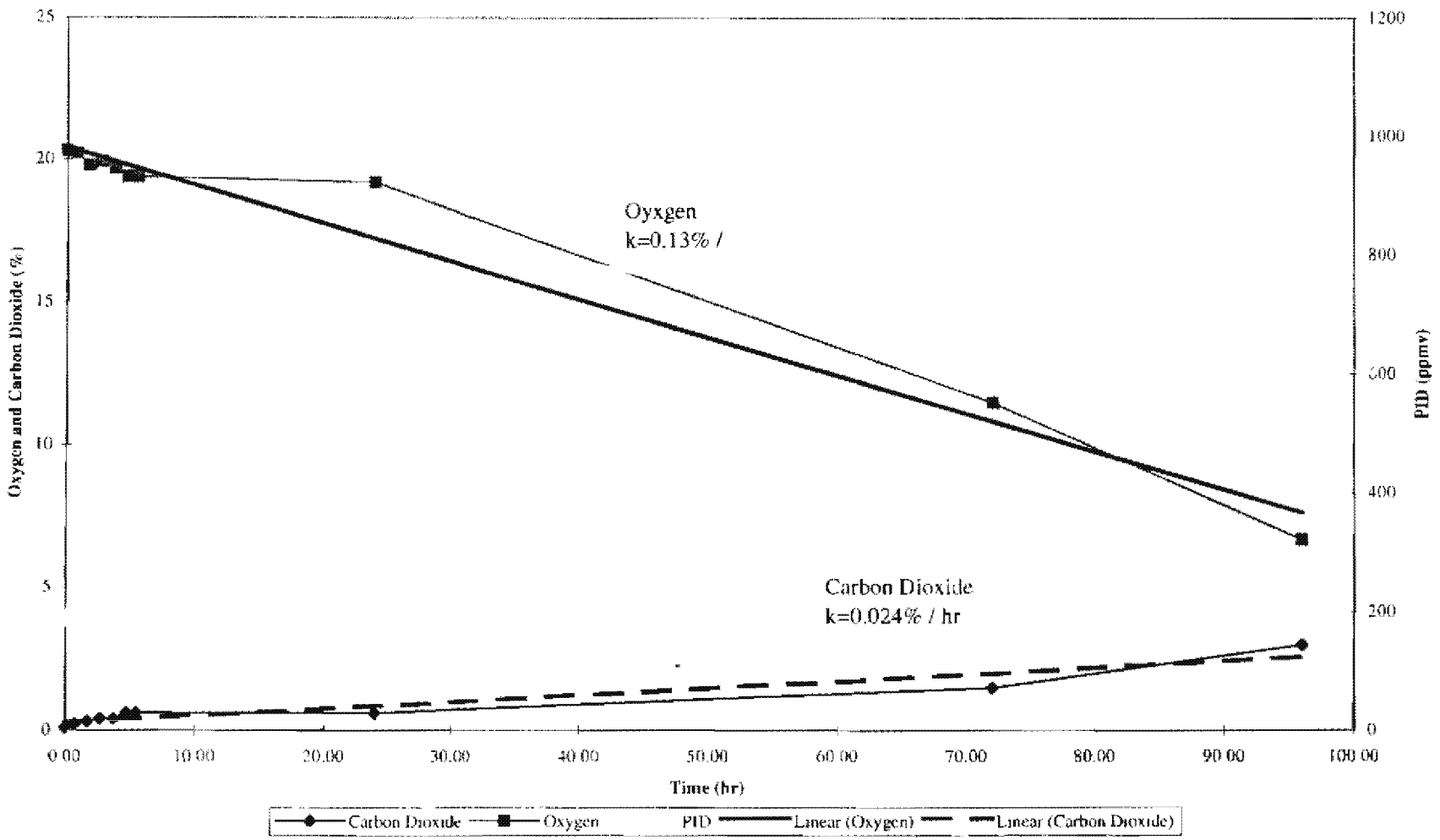
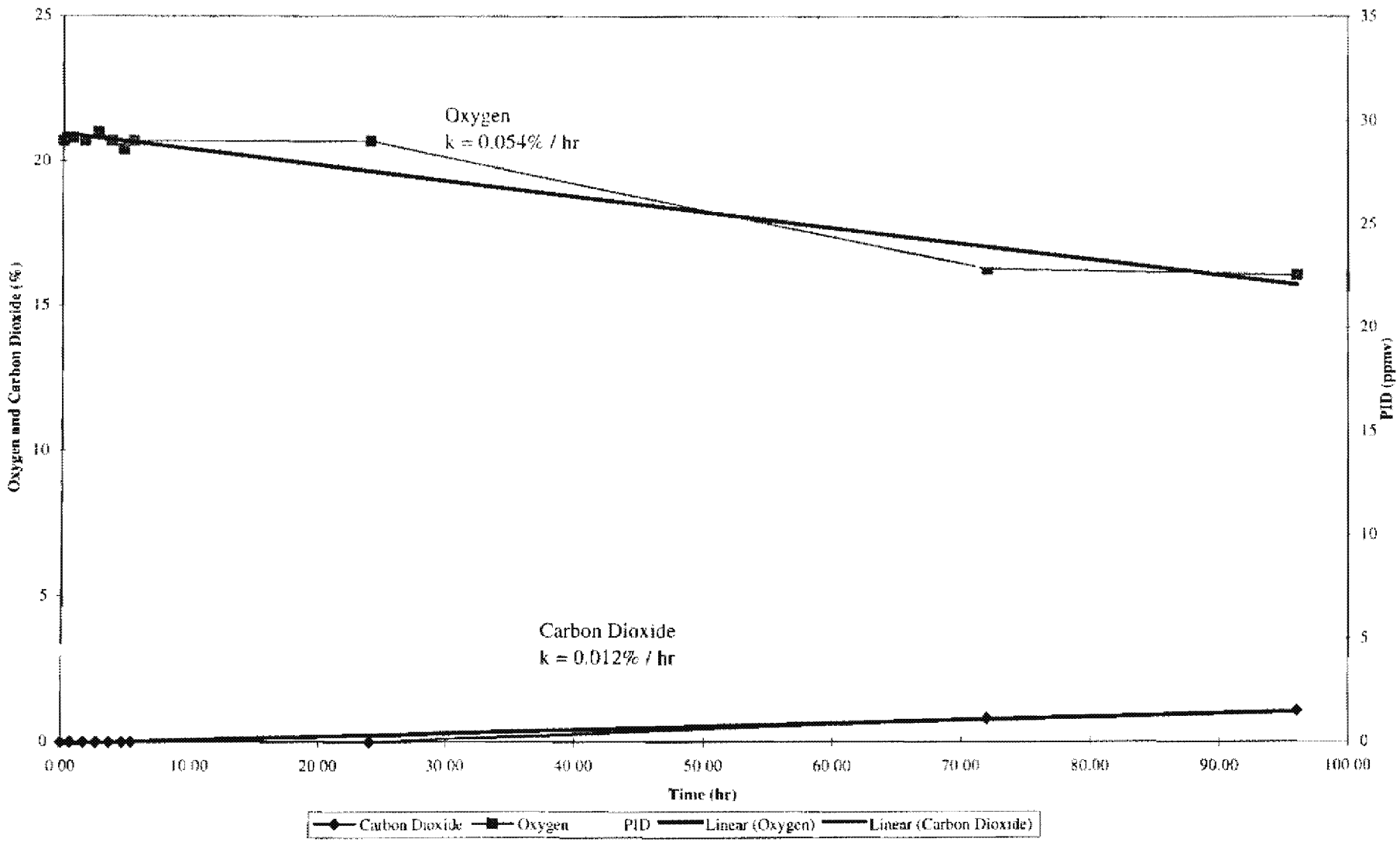


Figure 5
In-situ Respirometry Test Data VW-3B
Former Dial Facility
South Gate, California



CALCULATIONS

Calculation Sheet 1
VEW-1

Calculate biodegradation rates using oxygen utilization rates:

Assumptions:

- Hexane will be representative hydrocarbon
- Porosity is 0.3
- Soil bulk density is 1440 kg/m^3
- Oxygen atomic mass is 16; Carbon atomic mass is 12; Hydrogen atomic mass is 1
- Stoichiometry relation for degradation is

$$C_6H_{14} + 9.5\ O_2 \rightarrow 6\ CO_2 + 7\ H_2O$$

Based on utilization rates of oxygen and the generation rates of carbon dioxide, biodegradation rates in terms of mg of hexane equivalent per kg of soil per day.

$$K_B = -K_O * A * D_O * C / 100$$

Where

- K_B = Biodegradation rate in (mg/kg/day)
- K_O = Oxygen utilization rate (% per day)
- A = Volume of air per kg of soil (l/kg)
- D_O = Density of oxygen gas (mg/l) = 1,330 mg/l
- C = Mass ratio of hydrocarbon to oxygen required for mineralization = 3.5 based on hexane mineralization

Calculation

K_O = 0.13 % / hr * 24 hr/day = 3.12 % / day

A = Porosity / bulk density = 0.21

K_B = 3.12 %/day * (0.21) * (1330) * (1/3.5) / 100

K_B = 0.02 mg/kg/day

Calculation Sheet 2
VW-3B

Calculate biodegradation rates using oxygen utilization rates:

Assumptions:

- Hexane will be representative hydrocarbon
- Porosity is 0.3
- Soil bulk density is 1440 kg/m^3
- Oxygen atomic mass is 16; Carbon atomic mass is 12; Hydrogen atomic mass is 1
- Stoichiometry relation for degradation is

$$C_6H_{14} + 9.5\ O_2 \rightarrow 6\ CO_2 + 7\ H_2O$$

Based on utilization rates of oxygen and the generation rates of carbon dioxide, biodegradation rates in terms of mg of hexane equivalent per kg of soil per day.

$$K_B = -K_O * A * D_O * C / 100$$

Where

- K_B = Biodegradation rate in (mg/kg/day)
- K_O = Oxygen utilization rate (% per day)
- A = Volume of air per kg of soil (l/kg)
- D_O = Density of oxygen gas (mg/l) = 1,330 mg/l
- C = Mass ratio of hydrocarbon to oxygen required for mineralization = 3.5 based on hexane mineralization

Calculation

K_O = 0.054 % / hr * 24 hr/day = 1.30 % / day

A = Porosity / bulk density = 0.21

K_B = 1.30 %/day * (0.21) * (1330) * (1/3.5) / 100

K_B = 0.01 mg/kg/day

ATTACHMENT 1

CERTIFIED ANALYTICAL REPORTS

EMCON
3300 N. San Fernando Boulevard•Burbank, California 91504 • (818)841-1160 • Fax (818)846-9280

TRANSMITTAL

Project/Task No.: 0662-001.26

TO: Jim Ross
RWQCB-Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754

DATE: March 12, 1996

RE: Transmittal of errata pages 21 and 25 and Figure 10 from Groundwater Monitoring Report 1994 Annual and First Quarter 1995

WE ARE SENDING:

QUANTITY	DESCRIPTION
1	1 copy of Pages 21 and 25 and Figure 10 from Groundwater Monitoring Report 1994 Annual and First Quarter 1995

For Your:

- x USE
- ___ APPROVAL
- ___ REVIEW/COMMENTS
- x INFORMATION
- ___ OTHER

Sent By:

- x REGULAR MAIL
- ___ FEDERAL EXPRESS
- ___ UPS
- ___ COURIER
- ___ OTHER

COMMENTS: An error was found in the total mass of TCE and chromium removed calculations for the above mentioned report. Please remove pages 21 and 25 and Figure 10 from this report and replace them with the corrected pages 21 and 25 and Figure 10. If you have questions or require further information, please do not hesitate to call Donald Marcus or Sally Bilodeau at (818) 841-1160.

CC: Phil Chandler, DTSC, Glendale
Scott Simpson, DTSC, Glendale
Susan Salinas, Teleflex

BY: Chris L. Bonds

Print 3 copies: ORIGINAL - Recipient COPY - EMCON File COPY - Originator

BBM:\TALLEY\94ERTATR.DOC-95\clb:1

5.6.2 Mass Reduction Calculations for TCE and Chromium

The total volume of groundwater extracted during 1994 was 19,042,270 gallons. The largest volume of groundwater extracted during 1 month was 1,989,470 gallons in November. The least amount of groundwater extracted during 1 month was 765,010 gallons in September. The volume of water extracted in September was below normal because of a planned 2-week shutdown of the treatment system for coating of the bermed area. Monthly groundwater extraction and the cumulative total have been graphed (see Figure 9).

Based on the total gallons of groundwater extracted, and the approximate area and thickness of the TCE and chromium plumes, approximately 14.3 percent of the TCE plume pore volume and 47.3 percent of the chromium plume pore volume were extracted during 1994. A pore volume of 2 percent was used to calculate these percentages.

The mass removal of TCE and chromium was calculated using the quarterly influent groundwater TCE and chromium data multiplied by the total liters of groundwater processed at the treatment facility. Approximately 90 kilogram (kg) of TCE and 11 kg of chromium were removed during 1994 (see Figure 10).

An increasing chromium trend was confirmed in downgradient unweathered zone extraction well E-33, suggesting that it is successfully capturing more impacted water from upgradient areas.

Decreasing TCE and chromium trends were confirmed in well E-6, suggesting that E-6 effectively removes both contaminants from the aquifer in its vicinity. A decreasing chromium trend was noted in extraction well E-23 and monitoring wells E-13, E-14, E-24, E-31, E-35, E-36, and E-38. This decrease suggests that dissolved chromium is being removed from the aquifer.

6.4 QA/QC Analysis

The TCE analytical variance noted in the results of the duplicate analysis of well E-2 (46.3 percent) suggests that the sample was not homogeneous. Sample inhomogeneity is a commonly reported problem in wells containing high concentrations of TCE.

All of the duplicate samples analyzed for metals showed acceptable levels of variance for concentrations of selected metals in February 1995.

All other QA/QC results were within acceptance standards, except three surrogate recoveries. The chemists narrative states that the data was not compromised by the occurence.

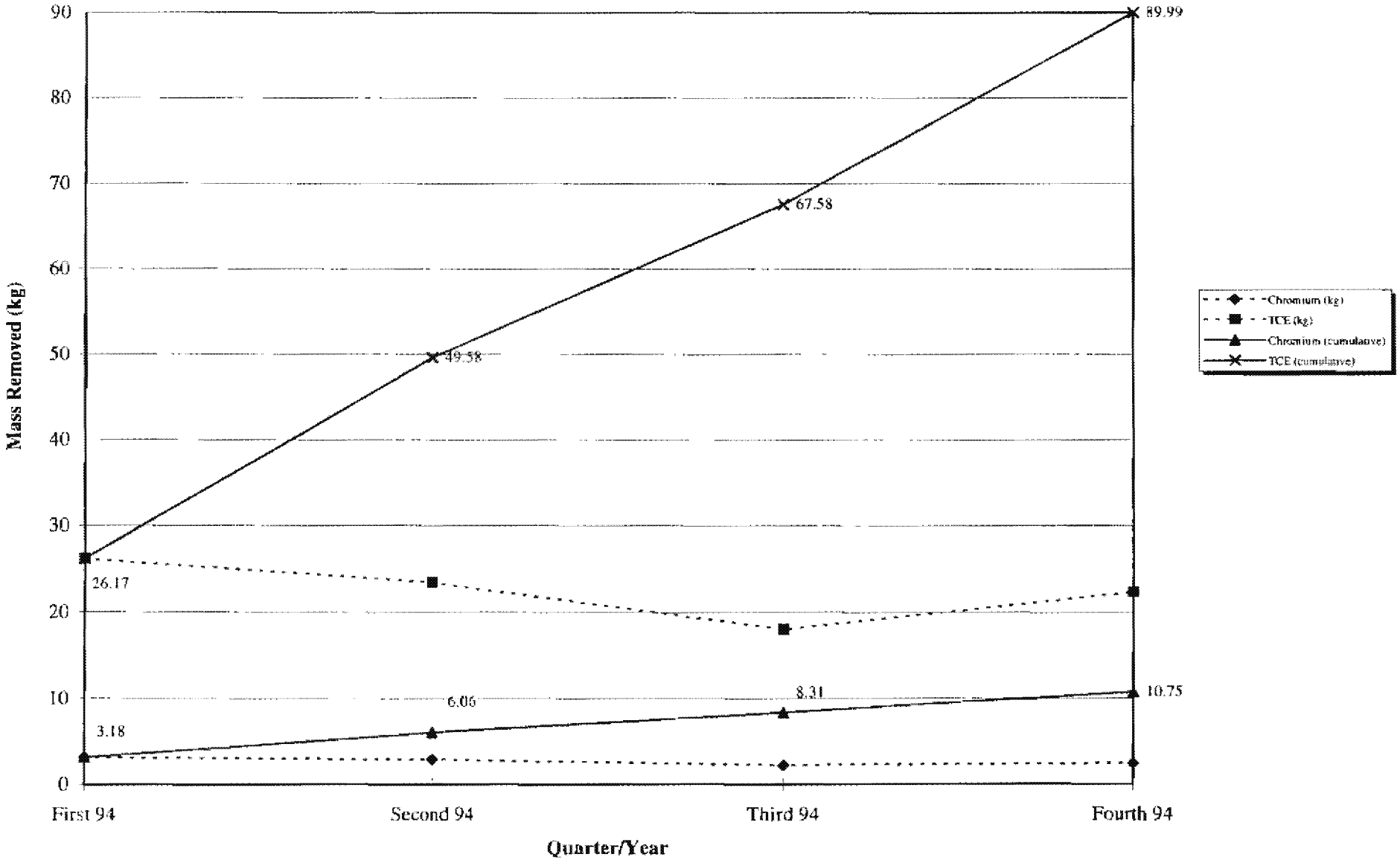
6.5 Extraction and Treatment System Performance

The 1994 average rate of pumping was 1.59 million gallons of groundwater per month, a decrease from the 1993 average of about 2 million gallons per month. The decrease throughput in 1994 is considered a result of a combination of drawdown of the aquifer and periodic nonoperation of the system for upgrades, maintenance, and repairs.

Despite the repairs and maintenance, the TCE and chromium plumes have changed little during the period. This indicates that effective plume control is being maintained even though pumping has decreased from 1993 levels.

The concurrent decreases in the water levels and general decreases in TCE and chromium concentrations noted during the 1994 period suggest that the expanded groundwater extraction system is both progressively dewatering the aquifer and reducing the dissolved mass of the TCE and chromium plumes. An estimated 90 kg (198 pounds) of TCE and 11 kg (24 pounds) of chromium were removed during the year, the result of extracting approximately 14.3 percent of TCE plume pore volume and 47.3 percent of chromium plume pore volume during 1994. As stated a pore volume of 2 percent was used to calculate these percentages.

Figure 10
TCE and Chromium Mass Removed During 1994



STATE OF CALIFORNIA - CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

1. Closure of SVE. w/ isolon map.
2. abandoned 4,000 gal Tank. Fate & Transport. 450 ppm. May be able to close under new UST no.

February 13, 1996

Michael E. Flack
Emcon
3300 North San Fernando Boulevard
Burbank, CA 91504

FORMER DIAL FACILITY - MAIN AREA - 9300 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

We have reviewed the submittals for the above mentioned site. Based upon the information submitted to date, we have the following comments:

SITE ASSESSMENT ACTIVITIES

1. During a site visit on December 6, 1995, staff noted that a number of sumps and equipment mounting pads inside several buildings have not been identified. We will require that all potential sources of contamination such as floor drains, sumps, and equipment pads be identified and its locations surveyed before the facility is decommissioned.

2. We will require proper closure of all USTs, sumps, floor drains, clarifiers, trenches, and AGTs. In addition, we will require that all sumps, floor drains, trenches, and clarifiers be tested for formaldehyde. AGTs. look @ concrete then sample. preservative not allowed

3. Benzene has been detected at elevated concentrations in MW-6 and MW-7. You are required to delineate the extent of this groundwater plume. 3 proposed MW

4. Groundwater sampling results from MW-2 indicated elevated concentrations of chloride and benzene at concentrations above MCLs. We will require that the extent of this groundwater problem be delineated.

5. Building 5 housed 16 AGT's which stored detergent. We will require that this area be tested for Methylene Blue Activated Substances.

6. We have determined that sampling has not been performed in the following area:

   - Former 100 gallon gas tank north of former Building 3.
   - Fuel Oil Tank 0224 and Alkane Oil Tank 0223.
   - Lube Oil Storage Area in Building 6.

HEALTH RISK ASSESSMENT

1. Only an industrial scenario has been evaluated in this Health Risk Assessment. Unless a "Deed Restriction" is imposed on the property, we will require a residential scenario evaluation. Will do deed restriction.

2. Unless you can provide this Board with a justifiable rationale that it is not necessary to perform an ecological risk assessment, we will require that one be performed for this site.

3. There should be no correction factor for the equation for inhalation of fugitive dust as listed on Table 4-3.

4. Page 5-3: The chemicals contained in "alkylate mixture 215" should be identified. The evidence of similarity in probable metabolic fate between "alkylate mixture 215" and dodecylbenzene should be provided in order to justify the use of these chemicals as suitable surrogates for dodecylbenzene toxicity.

5. Page 5-3: In order to determine if the studies cited are adequate for use in calculating reference dose, concise summaries of the studies should be included in the risk assessment for review. There is no summary of either the studies used to develop the inhalation reference dose or the studies used to develop the oral reference dose. The summary should include an overview of the study design, the animal species used, the number of animals in each dose group, the method of administration, etc.

6. Page 5-4: An uncertainty factor of 1000 (10x10x10) is often used in accounting for the three uncertainties of: variation in human sensitivity, extrapolation of animal data to humans, and conversion of subchronic to chronic results It is not acceptable to omit human sensitivity in the derivation of an uncertainty factor based on the likelihood that the resulting reference dose would be used in an industrial setting. therefore the uncertainty factor would most likely be 1000 rather than the 100 used in this evaluation. Furthermore, since an adequate summary of the study has not been presented, it is not possible to determine if the modifying factor of 1 is appropriate for developing inhalation reference dose.

7. Page 5-5: Since an adequate summary of the study has not been presented, we are unable to determine if the correction for subchronic to chronic exposures is unnecessary for developing an oral reference dose.

Not much info. on dodecylbenzene.
Alt. approach: structural analysis for similar compounds (benzene & alkalyte).
No surrogate for dodecylbenzene.
Guideline: n/a. Emcon will prepare "whitepaper" approach for our approval.

FATE AND TRANSPORT MODELING

1. Pages 3-1 and 3-2: We have no objections to using SESOIL to model the leachability at this site. However, ground water impact should be sufficiently addressed. A conceptual model should be developed to explain which fate and transport processes are relevant to the site, why the model is selected, and how assumptions can be compensated (e.g. how to simulate the contaminant after 99 years). Please refer to the attached copy of our draft guidance.

2. Page 3-3: Climate Data File: The assumption that a concrete cover inhibits downward migration may not be correct. The infiltration rate should be precipitation minus runoff rate. The runoff coefficient can be found in USEPA's Stormwater Sampling Guidance Document attached. According to this document, a runoff rate is not 100%, even on concrete surfaces.

   Application Data File: The relevant boring logs which were used to determine the simulation layers have not been provided.

   Soil Data File: Model results may be less meaningful if based on non-site-specific data. For example, soil bulk density was defaulted to 1.35 g/cm^3, which appears to be too low for soil in this area. Based on 57 soil samples obtained in the Los Angeles area ranging from 1.11 to 2.27, the average soil bulk density is 1.81 g/cm^3. Based on 11 soil samples obtained in the Carson area, which is located in the proximity to the subject site, the average value is 1.8 g/cm^3.

   Get real data to get more tentative to be uncertainty analysis

   In addition, the soil organic carbon content parameter was defaulted to 0.09% and labeled as the "lowest measured value". However, we have seen 0.02% reported in the Los Angeles area and 0.05% in the Carson area.

   Furthermore, soil porosity is a function of soil bulk density with $n = 1 - (\rho_b/\rho_s)$, where ρ_s is usually 2.65 g/cm^3. If a soil bulk density is 1.35 g/cm^3 as used in this report, the porosity should be equal to 0.49 and not 0.29 as calculated.

   Therefore, the claimed conservative estimate in the report may not be as it was intended, since no site site-specific soil data are available. Please note that the calculated concentrations would be much higher than the current results if the bulk density is 1.8 instead of 1.35. We recommend that an uncertainty analysis be conducted, using a range of parameter values specified in our guidance.

3. Page 3-4: No explanation was provided regarding running the model for only 25 years. We are mostly interested in the peak concentration at the groundwater table. A criterion should be established to determine the peak concentration from the model outputs, which may not occur in 25 years. Results from the sensitivity analysis should be provided as well.

   99 years

4. Page 7-2: As discussed above, since no site-specific data are available, it is difficult to verify if the results have been under- or over-estimated. Solutions or compensation should be provided to deal with the consequences of the uncertainties identified.

5. Page C-2: Based on the equation provided, pollutant input for Layer 1 should be 4.1 x 10^6 $\mu g/cm^2$ instead of 3.0 x 10^6.

Please submit written response to the above comments. We are available to meet with you regarding this matter. If you have any questions, please contact Ms. Jenny Au at (213) 266-7576.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: Michael Cavanaugh, The Dial Corp.

STATE OF CALIFORNIA-ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
400 P Street
P. O. Box 806
Sacramento, CA 95812-0806

Voice: (916) 323-3787
Fax: (916) 327-2509

30 January 1996

Rebecca Chou
Los Angeles Regional Water Quality Control Board
FAX (213) 266-7600

Re: TOXICITY ASSESSMENT OF DODECYLBENZENE
PCA 12185, Site 900013

I received the Toxicity Assessment section of a risk assessment that you sent to me by facsimile on January 18, 1996, and January 25, 1996. I have reviewed this section with regard to the questions you have posed and have the following comments.

1. Page 5-3. You asked if results of long term studies using "alkylate mixture 215" and a nonyl- and decylbenzene mixture are acceptable surrogates for establishing an inhalation reference dose. Dodecylbenzene is a benzene ring with a 12-carbon alkyl group substituted for a hydrogen. The mixture of nonyl- and decylbenzene have a 9- and 10-carbon alkyl group, respectively. However, the chemicals contained in "alkylate mixture 215" are not and should be identified. In addition, the use of these chemicals as suitable surrogates for dodecylbenzene toxicity should be supported by evidence of similarity in probable metabolic fate.

In order to determine if the studies cited are adequate for use in calculating reference doses, concise summaries of the studies should be included in the risk assessment for review. There is no summary of either the studies used to develop the inhalation reference dose or the studies used to develop the oral reference dose. The summary should include an overview of the study design, the animal species used, the number of animals in each dose group, the method of administration, etc. (Such summaries are provided in section 5.2.2 in which the development of a cancer slope factor for this chemical is discussed.)

2. Page 5-3. In answer to your question, it is acceptable to use six hours/day as a term in the equation adjusting the No Observed Effect Level (NOEL) for a continuous exposure. The equation is used to adjust an intermittent exposure of six hours/day for a continuous exposure of 24 hours/day.

3. Page 5-4. You have questions regarding the uncertainty factors used in the calculation to estimate a reference dose. An uncertainty factor of [illegible] 10 x 10 x 10 [illegible] used to account

for the three uncertainties of: variation in human sensitivity, extrapolation of animal data to humans, and conversion of subchronic to chronic results. It is not acceptable to omit human sensitivity in the derivation of an uncertainty factor based on the likelihood that the resulting reference dose would be used in an industrial setting. Therefore, the uncertainty factor should most likely be 1000 rather than the 100 used in this evaluation.

4. Page 5-5. Since there is no adequate summary of the study, it is not possible to determine if the correction for subchronic to chronic exposures is unnecessary or if the modifying factor of 10 is appropriate.

5. Pages 5-5 and 5-6. The studies summarized and discussed in Section 5.2.2 provide adequate justification for not assessing the potential carcinogenic effects of dodecyl benzene.

I hope the above information is useful to you. If you have additional questions, please call me at (916) 323-3767.

Sincerely,

Kimiko

A. Kimiko Klein, Ph.D.
Staff Toxicologist
Office of Scientific Affairs

STATE OF CALIFORNIA—ENVIRONMENTAL PROTEC. 4 AGENCY

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

January 16, 1996

Michael E. Flack
Emcon
3300 North San Fernando Boulevard
Burbank, CA 91504

FORMER DIAL FACILITY - SOUTH PARKING LOT - 9400 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

We have reviewed the Additional Site Assessment Report, dated January 8, 1996, for the above mentioned site. Based upon the information submitted, we concur with your findings that no further assessment is required for the site. Soil data collected to date indicates that there is no significant concentrations of VOCs, SVOCs, and metals detected at this site. Therefore, we will require no further actions related these issues.

In addition, we concur with your findings that the groundwater contamination detected in MW-8 and MW-10 is from an off-site source based upon the lack of VOCs in on-site soil samples.

Your proposal to excavate the ethylbenzene and xylene impacted soil detected in B-19 and B-33, is hereby approved. We will require confirmation samples to be collected from the sidewalls and bottom of the excavation. Please notify this office at least 48 hours prior to commencing field work. Staff will be present on-site to collect duplicate confirmation samples.

If you have any questions regarding this matter, please contact Ms. Jenny Au at (213) 266-7576.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: Michael Cavanaugh, The Dial Corp.

EMCON
3300 N. San Fernando Boulevard•Burbank, California 91504 • (818)841-1160 • Fax (818)846-9280

TRANSMITTAL

Project/Task No.: H93-001.06

TO: Ms. Jenny Au
Water Resources Control Engineer
California Regional Water Quality Control Board
101 Centre Plaza Drive
Los Angeles, California 91754

DATE: December 15, 1995

RE: File No. 95-066: Main Area and South Parking Lot Site Plan with updated information on Tank Contents

WE ARE SENDING:

QUANTITY	DESCRIPTION
(1)	Dial Main Area Site Plan with updated information on tank contents, 9300 and 9400 Rayo Avenue

For Your:

- ___ USE
- X APPROVAL
- ___ REVIEW/COMMENTS
- ___ INFORMATION
- ___ OTHER

Sent By:

- ___ REGULAR MAIL
- ___ FEDERAL EXPRESS
- ___ UPS
- X COURIER
- ___ OTHER

COMMENTS: Jenny per our November 14, 1995 meeting and previous discussions, I have updated the Main Area Site Plan with information on the contents of the tanks and have identified the process areas. This information was taken from the HMMP (Contained in the Phase 1 Report) and from discussions with former Purex Employees. I hope this information will help in your review of the work performed at the Main Area. As always please contact me with any questions that you may have regarding EMCON's past Assessment activities. If possible, I would like to get your review and resolve any remaining issues for the Main Area by the end of December ,1995. Please contact me if I can be of any assistance in meeting this deadline.

CC: Michael Cavanaugh, The Dial Corp w/ attachment

BY: Michael E. Flack

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GOLDEN STATE/CAS
LABORATORIES, INC.

November 30, 1995

Greg Coppola
EMCON
3300 North San Fernando Blvd.
Burbank, CA 91504

Re: **Dial Corporation - Southgate**

Dear Greg:

Enclosed are the results of the sample submitted to our lab on November 21, 1995. For your reference, these analyses have been assigned our service request number L9504096.

All analyses were performed in accordance with our laboratory's quality assurance program. Golden State / CAS is certified for environmental analyses by the California Department of Health Services (Certificate # 1296/Expiration - August 1996).

Please call if you have any questions.

Respectfully submitted,

Golden State / CAS Laboratories, Inc.

Eydie Schwartz

Eydie Schwartz
Project Chemist

ES/sjt

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

EMCON
3300 N. San Fernando Boulevard•Burbank, California 91504 • (818)841-1160 • Fax (818)846-9280

TRANSMITTAL

Project/Task No.: H93-001.06

TO: Ms. Jenny Au
Water Resources Control Engineer
California Regional Water Quality Control Board
101 Centre Plaza Drive
Los Angeles, California 91754

DATE: November 29, 1995

RE: File No. 95-066: Workplan for Additional Assessment, Former Dial South Parking Lot 9400 Rayo Avenue

WE ARE SENDING:

QUANTITY	DESCRIPTION
(3)	Workplan for Additional Assessment: Former Dial Corp Facility at 9400 Rayo Avenue, South Gate

For Your:

- ___ USE
- X APPROVAL
- ___ REVIEW/COMMENTS
- ___ INFORMATION
- ___ OTHER

Sent By:

- ___ REGULAR MAIL
- ___ FEDERAL EXPRESS
- ___ UPS
- X COURIER
- ___ OTHER

COMMENTS: Jenny per our November 14, 1995 meeting and previous discussions, I have prepared a Workplan for additional assessment at the Dial Corp South Parking Lot Facility. We are prepared to move ahead with this work upon your verbal authorization and have subsequently scheduled drilling to begin December 6, 1995. As we discussed, you thought it would be possible to get this workplan approved by Friday, December 1, 1995. Please call me if this is not possible. I would like to resolve the remaining assessment issues under this scope of work by the end of December ,1995. Depending upon the results of the assessment, I would like to start the remedial excavation program in the area of the former cleaning room by years end.

CC: Michael Cavanaugh, The Dial Corp w/ attachment

BY: Michael E. Flack

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Former Dial Facility
November 14, 1995 Meeting

Name	Organization	Phone No.	Fax No.
JOHN ESTADT	THE DIAL CORP	602·922·0019	602·207·5535
Rebecca Chen	RWQCB	213-266-7607	213-266-7600
Jenny An	"	213 266 7576	"
MICHAEL FLACK	EMKON	818 841-1160	846 9280

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

November 7, 1995
Project 0H93-004.06

Mr. Jim Ross
Unit Chief, Site Cleanup Section
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park , California 91754-2156

Re: File 95-066: Former Dial South Parking Lot, 9400 Rayo Avenue, South Gate

Dear Mr. Ross:

As part of a voluntary cleanup agreement with the Dial Corp (Dial), the Regional Water Quality Control Board-Los Angeles Region Site Cleanup Unit (RWQCB) has reviewed previous assessment documents for the former Dial South Parking Lot at 9400 Rayo Avenue and concluded that additional assessment is required (RWQCB letter to Dial dated October 19,1995). This letter was prepared to respond to the request made by the RWQCB that a soil gas survey be performed to determine if chlorinated volatile organic compounds (CVOCs) detected in a groundwater sample from well MW-8 hydraulically downgradient of the former cleaning room are from a source on the property or from a source off site. Our contention remains, that the source for these CVOCs in the groundwater below the former South Parking Lot site is from another property and that a soil gas survey is not warranted. We believe the information presented in this letter supports that position and, in light of this data, we request that the RWQCB reconsider its request for a soil gas survey of the South Parking Lot.

To identify potential off-site sources of CVOC-impacted groundwater EMCON conducted a file search of several properties in the area and bordering the former Dial Main Facility (9300 Rayo Avenue) and South Parking Lot. A copy of EMCON's letter report documenting the results of the file review is attached.. The results indicate there are several properties in the area that border the South Parking Lot site that have documented CVOC-impacted groundwater or soil or have used CVOCs during past or present site activities. Thirteen (13) properties were identified on agency database listings (LUST etc.) and six (6) of them had files available for review at various oversight agencies (DTSC, LACDPW, etc). No information was available in RWQCB files for these properties. The conclusions of our research and file review are as follows:

- Two commingled CVOC plumes are present below the South Parking Lot. One plume originates from the Cooper Drum Facility to the west and a second plume is from an upgradient source north of the South Parking Lot.

- One plume, containing a mixture of CVOCs, with signature compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE) appears to originate from the Cooper Drum facility which is adjacent to the South Parking Lot, west across Rayo Avenue (see Drawing 1 of attached report). PCE, reported in soil samples from the Cooper Drum facility, were also reported in a groundwater sample from Dial well MW-10 located on the western boundary of the South Parking Lot along Rayo Avenue. There also appears to be a concentration gradient consistent with reported groundwater flow to the southeast, with higher TCE concentrations in Cooper Drum wells located northwest of the South Parking Lot. Groundwater flow has been reported to the southeast below the Cooper Drum facility, which places the South Parking Lot in a downgradient position from this source of CVOCs.

- The second plume is suspected based on data from wells upgradient of Cooper Drum and wells north of the South Parking Lot along Rayo Avenue. Groundwater samples from some of these upgradient wells contain higher TCE concentrations in the groundwater than what has been reported in a sample from well MW-8, central to the South Parking Lot.

Several properties identified from the search had documented CVOC soil impacts or usage during past operations, but had no corresponding soil or groundwater sampling data in the agency files reviewed. The potential contribution from these properties is uncertain based on available file information.

Apart from the off-site information, we believe that the on-site assessment data generated to date does not indicate a release of CVOCs into subsurface soils beneath the South Parking Lot. The RWQCB contends that soil encountered in borings B-33, B-34, B-35, and B-37 was sandy as evidenced from cross sections presented in assessment reports, and therefore it would be expected that CVOCs could not be detected above a 0.005 mg/kg laboratory method reporting limit as a sorbed-phase in this media. While this may be true in some instances for sandy soil classified as SP or SW under the Unified Soil Classification System (ASTM D2488), it would not be uniformly true for sandy materials with fines (SM or SC) or fine-grained soils such as silts (ML) or clays (CL) with higher specific retentions. Examination of the borings referenced indicates silty sands with an average of 25 to 30 percent fines were encountered at depths to 10 to 20 feet below the ground surface(bgs) and fine-grained soils were also locally present at depths of 10 to 30 feet bgs. In our experience, CVOCs would remain sorbed in these materials and would be expected at concentrations above laboratory method reporting limits, if present. Further, as moisture also aids in "retaining" CVOCs in the soil, the moisture contents observed in several of the samples collected from the referenced borings would suggest that if present, CVOCs would have been detected.

As indicated by the off-site research of adjacent properties, we believe that groundwater beneath the South Parking Lot is impacted from a source off the property. We also contend that soil beneath the site is sufficiently "fine grained" with a high enough specific retention and moisture content to retain CVOCs, if they were present in borings B-33, B-34, B-35 and B-37. Therefore, on behalf of Dial, we request that the RWQCB reconsider its request for a soil gas survey to determine if the property is a source for the CVOCs reported in groundwater samples from well MW-8.

We would like to meet with your staff in the next couple of weeks to discuss our request and the additional assessment required for the South Parking Lot given in the October 19, 1995 letter. A buyer has been identified for this property, who would like to have Dial attain a "no further action status" for the South Parking Lot within a 240-day period. Communication with your staff to achieve this goal will be critical once the time period is set in motion. Please call me at your earliest convenience to schedule a meeting and discuss this property.

Sincerely,

EMCON

Michael E. Flack, R.G.
Project Manager

Attachments: EMCON Letter Report: Adjacent Property Review for the Purpose of Identifying Off-Site Sources of Chlorinated Volatile Organic Compound-Impacted Groundwater (November 2, 1995).

cc: Jenny Au, RWQCB
John Estadt, Dial Corp

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

October 12, 1995
Project 0H93-001.006

Ms. Jenny Au
Water Resources Control Engineer
California Regional Water Quality Control Board - Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Remediation Progress Update (August 1995)
Former Dial Corporation Facility
9300 East Rayo Avenue, South Gate

Dear Ms. Au:

EMCON is providing this report summarizing the vapor extraction system (VES) operation at the referenced Dial Corporation (Dial) Facility in South Gate for the period of July 31 to August 31, 1995. The VES consists of seven vapor extraction wells or well nests and a Stealth Industries 250 cfm thermal/catalytic oxidizer (SI 250). The oxidizer was started on January 26, 1995.

VES OPERATIONAL DATA

The following table summarizes the monitoring data for the period.

Cumulative Operational Time (hours)/days	4883.2 / 218
Percent Operational Time this Period/project	100% / 93%
Inlet TVH Concentrations (ppmv)/highest	1,100 / 4,500
Inlet Benzene Concentration (ppmv)/highest	2.3 / 52
Cummulative TVH Pounds Removed (lbs)	19,222
Cumulative Benzene Pounds Removed (lbs)	104

Since the start up, the system has operated for 218 days and has operated 4,883 hours. Since the initial start-up the SI 250 has been 93 percent operational. Since April 15, 1994 the SI 250 has been 100 percent operational. The system has operated for 31 days in this reporting period. Intake vacuums have ranged 62 inches of water (w.c.) to 100 inches w.c. as wells have been opened and closed. During this period the process flow rate extracted from the well field ranged from 75 cubic feet per minute (cfm) to 158 cfm.

The volatile organic compound (VOC) concentrations in the vapor stream are measured by a photoionization detector (PID) calibrated to isobutylene. During this reporting period VOC readings measured in the influent before dilution ranged from 260 parts per million by volume (ppmv) to 870 ppmv. Effluent VOC readings ranged from 6.7 ppmv to 21 ppmv, which is below the permitted effluent VOC reading of 50 ppmv. The lower explosive limit (LEL) has ranged from 9.3 percent by volume (% vol) to 15.35 % vol. See Table 1 for a complete summary of the vapor extraction system operating data.

Beginning in mid-March 1995, during weekly site visits, those wells that showed poor production were shutdown to optimize recovery and to maintain an optimal mass removal rate. Wells are closed as they show declining vapor concentrations measured in the field with a photoionization detector. Wells VW-2, VW-3B, VW-4B, VW-5A and VW-5B are showing declining PID readings (50 to 490 ppmv). Since March, 1995 these wells have been periodically closed to maximize the removal of petroleum hydrocarbons from wells VW-1, VW-3A and VW-4A. Each well is monitored for oxygen, carbon dioxide, vacuum, PID readings, and vapor flow.

During August 1995, in an effort to maximize hydrocarbon extraction rates, EMCON focused extraction efforts from the remaining wells that produced the highest vapor concentrations (VW-1, VW-3A).

REPORTING PERIOD SAMPLE RESULTS

For this reporting period, one influent sample (before dilution) was collected and delivered to a state certified laboratory for analysis of volatile petroleum hydrocarbons content (C_5-C_{12} range). The concentration of TVH as gasoline in this vapor sample was reported to be 1,100 ppmv (August 23, 1995). The historic VES analytical data since startup in early 1995 is summarized in Table 2 and graphically represented in Charts 1, 2, and 3.

The certified analytical reports (CARs) for the vapor samples collected over this reporting period are presented in Attachment 1.

SYSTEM PERFORMANCE

To date approximately 19,222 pounds (lbs) of total volatile hydrocarbons (TVH) as gasoline (C_5-C_{12} range) and approximately 104 lbs of benzene have been extracted from the wells and oxidized by the SI 250 unit in 4,716 hours of operation (Table 3, Charts 1 and 2). Over the reporting period the SI 250 operational uptime was 100 percent.

The remedial effort, including the internal combustion engine (ICE 12,847 lbs) operational in the fourth quarter of 1993 and the SI 250, has removed 32,070 lbs of TVH as gasoline. The highest TVH concentration recorded during the remedial efforts was 36,000 ppmv during the four quarters of 1993, and the latest (August 23, 1995) TVH concentration was 1,100 ppmv. Since the startup of the remediation system in early 1995, the concentration of benzene in extracted vapors has been reduced from 52 ppmv to approximately 2 ppmv (Figure 2).

IN SITU BIOREMEDIATION

The percent of oxygen in the subsurface vapor has shown a gradual increase since the outer wells have been open to the atmosphere. This infiltration of oxygen aids in the removal of petroleum hydrocarbons by biological remediation. The process of aerobic bioremediation appears to be occurring in the subsurface. During aerobic bioremediation, a biomass uptakes oxygen, nutrients, and the petroleum hydrocarbons to produce energy. The biomass will release carbon dioxide as a waste product. Monitoring results have shown elevated carbon dioxide and lowered oxygen readings in samples from wells VW-1, VW-2, VW-4B, and VW-5B, indicating aerobic bioremediation.

Between October 9 to October 23, 1995 EMCON will perform an in-situ respirometry test at the site. This test will estimate rates of destruction of petroleum hydrocarbons by in-situ bioremediation. During the test, the vapor extraction wells will be periodically purged and sampled for carbon dioxide, oxygen, relative humidity, and VOC. Following the field work the data will be evaluated to determine bioremediation activity. This data may be used to support a remedial program based on natural attenuation of hydrocarbons in the subsurface through a mechanism of intrinsic bioremediation. An option for natural attenuation may be needed, if SVE is not completely effective in removing all hydrocarbons sorbed to the soils in the area of the former garage and underground storage tanks.

The SVE has shown a steady removal of volatile hydrocarbon compounds since startup in January 1995. Based on the declining TVH and benzene concentrations in the extracted vapor, it is anticipated that the SVE will achieve its engineered efficiency in the next couple of months. Beyond that time, operation of the SVE will not be cost beneficial in

removing volatile hydrocarbons. If you have any questions or comments regarding this report or the project in general please do not hesitate to call.

Sincerely,

EMCON

Gregory V. Coppola
Project Engineer

Michael E. Flack
R.G. 5473
Project Manager

Attachments: Abbreviations and Notes
Table 1 - Vapor Extraction System Operation Data
Table 2 - Laboratory Analytical Results of Extracted Vapors
Table 3 - Benzene and TVH Gasoline Mass Removal Data
Figure 1 - TVH Concentration and Mass Removed vs. Operating Hours
Figure 2 - Benzene Concentration and Mass Removed vs. Operating Hours
Figure 3 - BTEX Concentration vs. Operating Hours
Attachment 1 - Certified Analytical Reports

cc: Jay Sampat, Dial Corporation
John Estadt, Dial Corporation

ABBREVIATIONS AND NOTES

The following is an explanation of the abbreviations and notes used in the attached tables and figures.

Abbreviations:

HRS	-	Hours
N/M	-	Not Measured
SCFM	-	Standard Cubic Feet Per Minute
in. w.c.	-	Inches of Water Column
°F	-	Degrees Fahrenheit
ppmv	-	parts per million by volume
vol %	-	percent by volume
%	-	percent
lbs	-	pounds

Notes:

(1) Cumulative Operating Hours - The Cumulative Operating Hours are the hours the SVE system has been in operation.

(2) Process Flow Rate/Total Flow Rate - Total flow and processing flow is measured by pressure flow elements. The total flow rate is the flow that enters the oxidizer. Process flow rate is the flow coming from the wells.

(3) Inlet vacuum is measured by EMCON, and represents the vacuum that is applied to the well field.

(4) Temperatures are measured via thermocouples in the Stealth unit.

(5) VOC is measured by EMCON using a portable photoionization detector.

(6) Oxygen is measured by EMCON using field instrumentation.

(7) LEL is measured by the Stealth. The MSA LEL sensor is calibrated regularly.

(8) Concentrations of specific compounds are analyzed by certified laboratories. The samples are handled under strict chain-of-custody. Please see laboratory analytical reports for specific methods and detection limits.

(9) Mass removal data is the total pounds of the constituent removed during the operation of the Stealth 250.

TABLES

Table 1
Vapor Extraction System Operating Data

In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Total Flow Rate (SCFM) (2)	Inlet Vacuum (in. W.C.) (3)	Exhaust Temperature (°F) (4)	Process Temperature (°F) (4)	Inlet VOC -before dilution- (ppm) (5)	Inlet VOC -after dilution- (ppm) (5)	Effluent VOC (ppm) (5)	Oxygen Level (vol %) (6)	LEL Level (%) (7)
1/26/95	0.1	258	321	11	639	688	2068	557	50.7	18.7	14.9
2/1/95	54.3	159	N/O	53	1451	1324	2500	2500	0	11	34.9
2/8/95	219.8	162	N/O	53	1342	1460	N/M	N/M	N/M	13.9	39.7
2/22/95	539.6	120	N/O	62	1332	1448	N/M	N/M	N/M	17.2	31.8
3/1/95	701.2	47	N/O	50	1330	1448	720	560	12.5	19.2	22.1
3/6/95	748.9	108	N/O	28	1404	1460	460	400	10.6	18.9	12.9
*	750.4	95	N/O	28	1350	1460	472	408	10.2	18.7	15.6
3/8/95	797.3	152	N/O	58	1335	1552	343	510	14.6	15.9	29.2
3/14/95	936	92	154	46.2	1352	1468	885	720	20.8	17.4	24.1
3/22/95	1070.3	52	152	42.6	1340	1450	1218	932	4.6	20.4	22.8
3/28/95	1211.2	35	151	48	1311	1460	813	539	0	19.5	22
4/4/95	1378.2	44	144	46	1306	1446	880	580	20.3	19.7	14.8
4/5/95	1400.2	36	142	51	1330	1450	677	551	19.9	16.9	25.2
4/11/95	1546.2	N/M	N/O	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
4/18/95	1712.8	N/M	N/O	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
5/4/95	2048.5	196	163	74	743	692	315	300	11	20.7	8.1
5/11/95	2213.2	185	147	88	803	722	286	280	18	20.9	8.9
5/18/95	2383.8	188	188	88	724	788	188	179	11.4	20.9	9
5/23/95	2502.9	130	130	69	857	874	863	859	11.6	20.9	9.5
6/2/95	2744.8	139	N/O	62	776	760	789	782	9.5	21.3	10.4
6/6/95	2842	58	N/O	34	720	702	1644	513	9.6	20.1	10.1
6/12/95	2983.8	95	154	56	707	688	1360	791	15.6	18.7	19.1
6/20/95	3172.8	85	112	92	892	893	780	79	16.4	20.9	13.7
6/26/95	3321.1	95	128	76	800	770	1724	1395	7.9	20.6	19.8
7/6/95	3556.4	130	117	53	670	658	2360	2360	20.5	20.8	14.16
7/10/95	3654.8	140	N/O	56	674	661	2230	2230	18.6	20.8	13.9
7/17/95	3823.4	142	148	58	678	664	123	123	10.3	21	14.5
7/24/95	3988.2	128	N/O	62	677	660	560	570	9.2	20.7	4.7
7/31/95	4155.4	75	140	62	689	684	870	554	6.7	21	12.8
8/7/95	4325.2	115	175	90	675	660	680	444	11.6	20.8	9.3
8/14/95	4490.9	104	164	94	674	664	660	450	11.2	18.5	10.2
8/23/95	4716.4	117	155	90	659	652	260	209	21	20.38	10.67
8/31/95	4883.2	158	212	100	595	650	566	519	8.7	19.13	15.35

Table 2
Laboratory Analytical Results of Extracted Vapors

In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

Sampling Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Benzene (ppmv) (8)	Toluene (ppmv) (8)	Ethylbenzene (ppmv) (8)	Total Xylenes (ppmv) (8)	Total Volatile Hydrocarbons (ppmv) (8)	C1 to C4 Hydrocarbons (ppmv) (8)	C5 to C8 Hydrocarbons (ppmv) (8)	C9 to C12 Hydrocarbons (ppmv) (8)	TVH Gasoline C5 to C12 (ppmv) (8)
2/1/95	54.3	159	52	83	31	100	4600	310	3000	1400	4400
2/8/95	219.8	162	40	81	18	105	3600	1100	2500	0	2500
3/28/95	1211.2	35	27	100	36	120	4600	100	2700	1800	4500
5/11/95	2213.2	185	10	41	23	78	2200	64	950	1200	2200
6/6/95	2842	58	16	67	41	130	3300	39	1600	1700	3300
7/6/95	3556.4	130	2	13	10	33	730	12	270	450	720
8/23/95	4716.4	117	2.3	16	13	43	1100	25	420	670	1100

Table 3
Benzene and TVH Gasoline Mass Removal Data

In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California

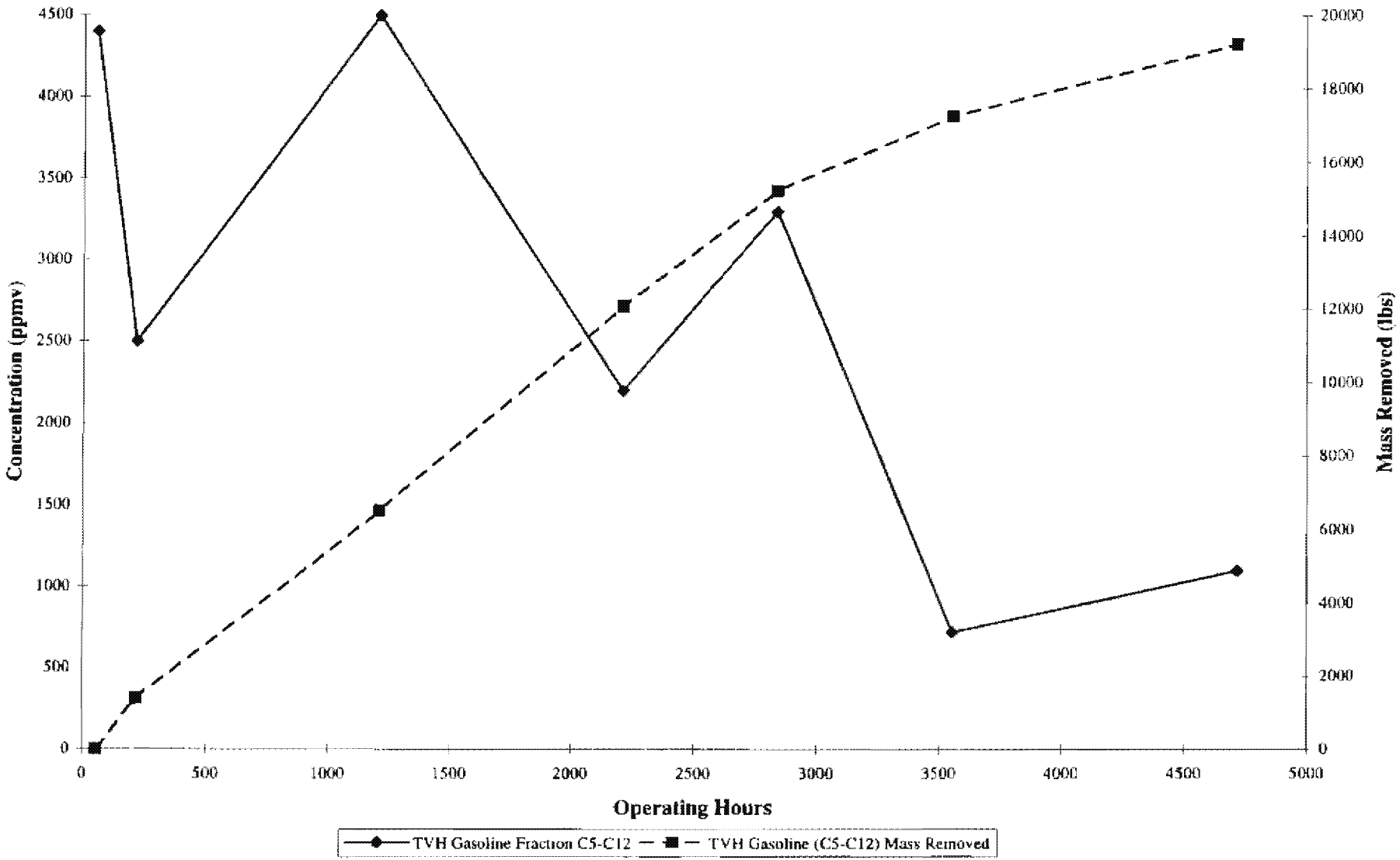
Sampling Date	Cumulative Operational Hrs. (1)	Process Flow Rate (SCFM) (2)	Benzene (ppmv) (8)	C5-C12 TVH Gasoline (ppmv) (8)	Benzene Mass Removed (lbs) (9)	TVH Gasoline (C5-C12) Mass Removed (lbs) (9)
2/1/95	54.3	159	52	4400	0	0
2/8/95	219.8	162	40	2500	15	1378
3/28/95	1211.2	35	27	4500	55	6519
5/11/95	2213.2	185	10	2200	81	12072
6/6/95	2842	58	16	3300	93	15232
7/6/95	3556.4	130	2	720	100	17262
8/23/95	4716.4	117	2.3	1100	104	19222

FIGURES

9/12/95
0H93-001.006

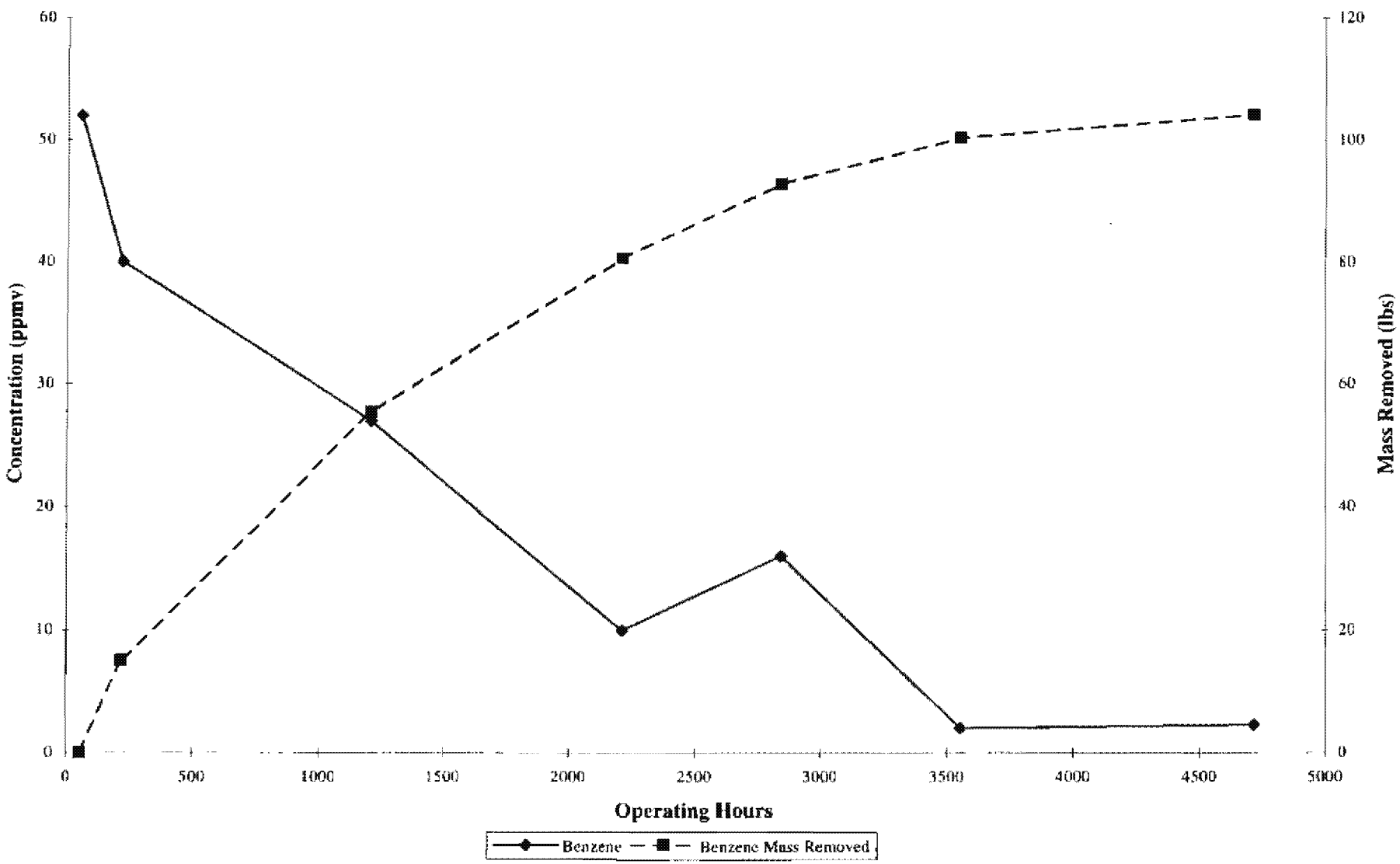
Figure 1
TVH Concentration and Mass Removed vs. Operating Hours

In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California



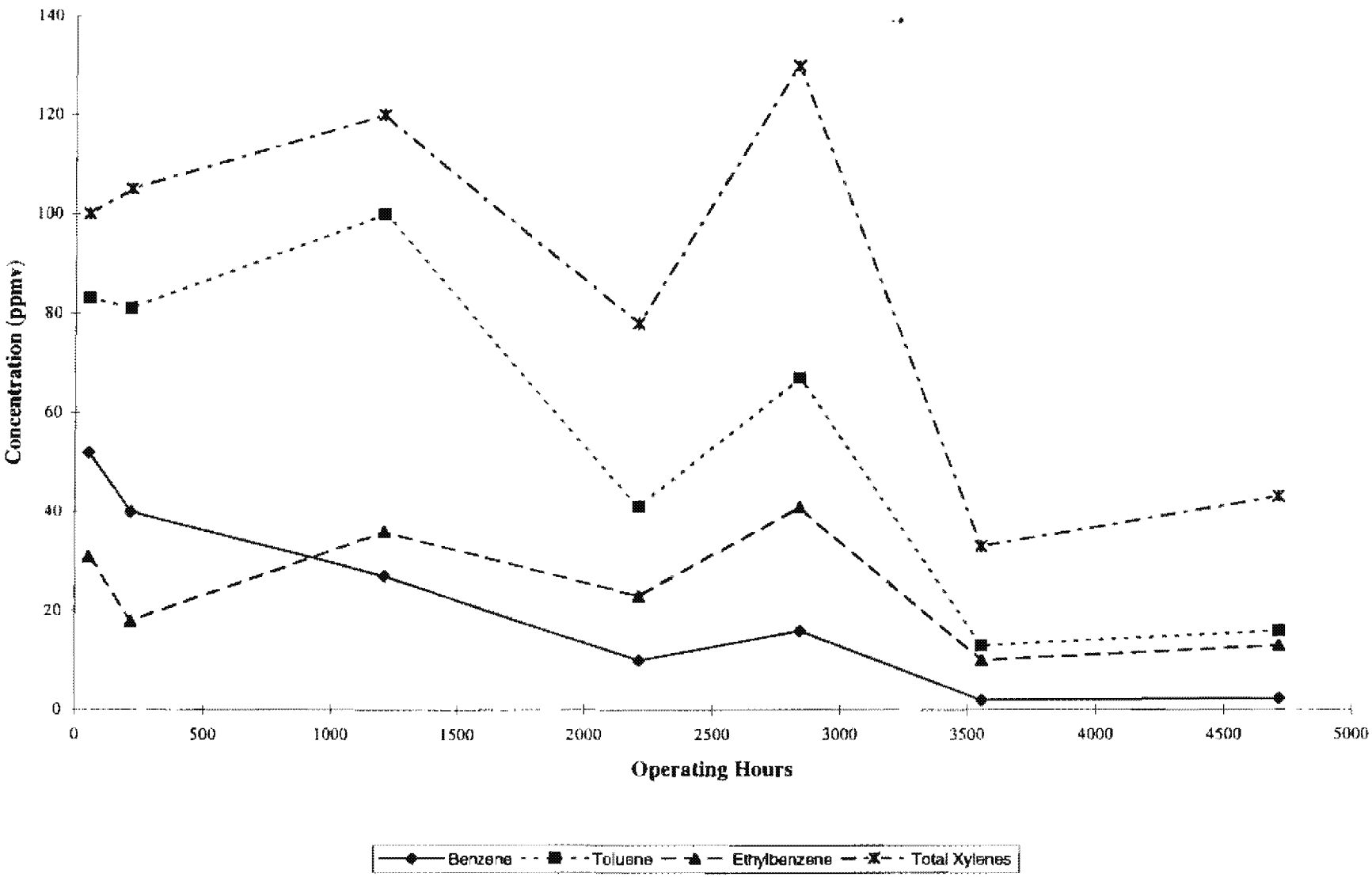
9/12/95
0H93-001.006

Figure 2
Benzene Concentration and Mass Removed
vs. Operating Hours
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California



9/12/95
OH93-001.006

Figure 3
BTEX Concentration vs Operating Hours
In-Situ Vapor Extraction Program
Former Dial Facility
South Gate, California



ATTACHMENT 1

CERTIFIED ANALYTICAL REPORTS

GOLDEN STATE/CAS
LABORATORIES, INC.

August 31, 1995

Greg Cappola
EMCON
3300 North San Fernando Blvd.
Burbank, CA 91504

Re: **Dial Corporation-9300 Rayo Avenue, South Gate, CA**

Dear Greg:

Enclosed are the results of the sample submitted to our lab on August 24, 1995. For your reference, these analyses have been assigned our service request number L953256.

All analyses were performed in accordance with our laboratory's quality assurance program. Golden State / CAS is certified for environmental analyses by the California Department of Health Services (Certificate # 1296/Expiration - August 1996).

Please call if you have any questions.

Respectfully submitted,

Golden State / CAS Laboratories, Inc.

Paul Christ for

Eydie Schwartz
Project Chemist

ES/kmr

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	US Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute of Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986, and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

.OLUMBIA ANALYTICAL SERVICES, I. .

Analytical Report

Client: EMCON
Project: Dial Corporation
Sample Matrix: Air

Service Request: L953256
Date Collected: 8/23/95
Date Received: 8/24/95
Date Extracted: NA

BTEX and Total Volatile Hydrocarbons*
Units: uL/L (ppmV)

		COMBINED	
	Sample Name:	**INFLUENT**	**Method Blank**
	Lab Code:	L953256-001	L953256-MB
	Date Analyzed:	8/25/95	8/25/95
Analyte	**MRL**		
Benzene[1]	0.1	2.3	ND
Toluene[1]	0.1	16	ND
Ethylbenzene[2]	0.1	13	ND
Total Xylenes[2]	0.2	43	ND
Total Volatile Hydrocarbons**	15	1100	ND
C1-C4 Hydrocarbons*	5	25	ND
C5-C8 Hydrocarbons*	5	420	ND
C9-C12 Hydrocarbons*	5	670	ND
Total Volatile Hydrocarbons**[4]	15	1100	ND

1 Benzene and Toluene are included in the C_5-C_8 hydrocarbon fraction.
2 Ethylbenzene and Total Xylenes are included in the C_9-C_{12} hydrocarbon fraction due to the use of C_1-C_8 n-paraffins as the standard for Total Volatile Hydrocarbons.
* Total Volatile Hydrocarbons quantified using n-paraffins with a range of C_1-C_8.
** Result is rounded to two significant figures.
4 Gasoline Fraction (C_4-C_{12})

Approved By: Paul Christ- Date: 8/31/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

GOLDEN STATE/CAS
LABORATORIES, INC.
6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303
818 587-5550 ■ FAX #818 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 08-23-95 PAGE 1 OF 1

COMPANY/ADDRESS EMCON.
BURBANK, CA PHONE 818-841-1160
PROJECT NAME/LOCATON DIAL CORPORATION
9300 RAYO AVENUE, SOUTH GATE, CA
PROJECT MNGR. GREG CAPPOLA
SAMPLERS SIGNATURE X

GS/CAS #C953256

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH-Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☒	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics 624/MS 624/8240/8260	Base/Neutral/Acid Organic 625/ms 625/8270	CAM Metals 6010/7000	REMARKS
Combined Influent	08-23-95	4:05 PM	C953256-1	AIR	1	X	X							

RELINQUISHED BY:
Signature
EMCON
Firm
08-24-95 8:05 AM
Date/Time

RECEIVED BY:
Signature
GS/CAS
Firm
8/24/95 8:05 AM
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
X Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (Includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O. # _____
Bill to: _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Accepted for Analysis by: _____

RELINQUISHED BY:
Signature
Firm
Date/Time

RECEIVED BY:
Signature
Firm
Date/Time

RELINQUISHED BY:
Signature
Firm
Date/Time

RECEIVED BY:
Signature
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

STATE OF CALIFORNIA—ENVIRONMENTAL PROTEC AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

October 13, 1995

John Estadt
The Dial Corp.
1850 North Central Avenue
Phoenix, AZ 85004

FORMER DIAL FACILITY, 9300 RAYO AVENUE, SOUTH GATE, (FILE NO. 95-066)

In a letter dated July 7, 1995, the Water Board agreed to provide regulatory oversight for the above mentioned site under our Cost Recovery Program. Under Section 13001 of the California Water Code, the Water Board has the authority to oversee the investigations and cleanup and abatement activities resulting from unauthorized discharges adversely affecting the State's Waters.

Our regulatory oversight authority includes review/approval of workplans and technical reports and final remedial plans, perform site inspections, attend meetings, and review management options. When Water Board staff determines that the site has met our cleanup requirements for site closure, we will issue a "No Further Action" letter for both soil and groundwater to the responsible party.

Please contact Ms. Jenny Au at (213) 266-7576 if you have any questions.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: Michael Flack, Emcon & Associates

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

95 AUG 31 PM 10:53

QUALITY CONTROL BOARD
LOS ANGELES REGION

August 29, 1995
Project H93-001.06

Mr. Jim Ross
Care of Ms. Jenny Au
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California

Re: File 93-066, Voluntary Cleanup Contract: Former Dial Soap Manufacturing Facility 9300 to 9400 Rayo Avenue, South Gate, California

Dear Mr. Ross:

The Dial Corporation (Dial) has entered into a voluntary cleanup agreement with the California Regional Water Quality Control Board-Los Angeles Region (RWQCB) for oversight of the referenced property in South Gate, California. To initiate the review process, EMCON has compiled the available reports prepared from December 1991 to July 1995, that describe the environmental condition of the soil and groundwater beneath the above-referenced properties. The reports have been organized into three-ring binders and individually separated by subareas within the property that have identified impacted soil and groundwater. The reports are placed within each subarea in a chronological fashion beginning with the oldest proceeding to the most recent. The project site is generally divided into the Main Facility (9300 Rayo Avenue) and the South Parking Lot (9400 Rayo Avenue). General categories such as agency correspondence, Health and Safety Plan and quarterly reporting are also presented. The binders are organized as follows:

BINDER 'DIAL MAIN FACILITY, 9300 RAYO AVENUE' (VOLUME 1)

Agency Correspondence
Phase One Assessment Report (December 1991)
Phase II and III Site Assessment Report (August 5, 1992)
Phase IV Site Assessment Report (April 9, 1993)

BINDER 'DIAL MAIN FACILITY, 9300 RAYO AVENUE' (VOLUME 2)

Main Facility Subarea 'Alkylate Unloading Area'

a.) Bioremediation Study (January 15, 1993)
b.) Analysis of Dodecylbenzene-Impacted Soil (July 9, 1993)
c.) Dodecylbenzene Health Risk Assessment (January 1994)

Main Facility Subarea 'Old Garage Area'

a.) Soil Vapor Extraction Test (July 12, 1993)
b.) Performance and Operational Status Report: Long-Term SVET (November 15, 1993)
c.) Evaluation of Soil Vapor Extraction Emission Control Units (January 10, 1994)
d.) Various Locations and Site specific SCAQMD Permitting (December 1994 and April 1995)
e.) SVE Startup and Performance and Operational Status Reports (February to August 1995)

Main Facility Subarea 'Schultz Steel'

a.) Assessment of Steel Drain and Associated Surface Drain and Sump (February 25, 1995)
b.) Analysis of Steel Drain (May 14 and June 10, 1993)

Quarterly Reports (1992 - 1995)
Health and Safety Plan

BINDER ' DIAL SOUTH PARKING LOT, 9400 RAYO AVENUE'

Phase II and III Site Assessment Report (July 31, 1992)
Phase IV Site Assessment Report (November 18, 1992)
Soil Vapor Extraction Test (November 17, 1992)
Soil and Groundwater Assessment Report (June 25, 1993)
Remedial Action Plan for Hydrocarbon-Impacted Soils (September 7, 1993)

The major assessment reports (Phase II to IV) are presented first in each binder to establish the individual subareas within the Main Area and the South Parking Lot. The Schlutz Steel subarea represents a complaint directed toward an adjacent property owner for discharge of storm water runoff onto the Dial facility. This condition has been settled in court and storm water runoff no longer is directed onto the Dial property from an off-site source. A project summary has also been attached to provide a general description of the assessment and remedial efforts performed to date and give a general introduction to each of the subareas. Because of the large volume of information which needs to be assimilated, please don't hesitate to call me at your convenience should you require further information or explanation regarding any of these documents.

Because the referenced properties are under consideration for purchase and the intent is to demolish the facility by year end, please contact me with a schedule for completion of the

document review and when we might be able to discuss your conclusions regarding the project.

Sincerely,

EMCON

Michael E. Flack
Project Manager

Attachments: Project Summary
Binder: DIAL Main Facility, 9300 Rayo Avenue
Binder: DIAL South Parking Lot, 9400 Rayo Avenue

cc: John Estadt, The Dial Corporation - w/o Attachments
Jay Sampat, The Dial Corporation - w/o Attachments
Harry Van Den Berg, EMCON - w/o Attachments

ATTACHMENT 1

PROJECT SUMMARY

1 PROJECT SUMMARY

Phase I activities were completed at the site by Phase One Inc. in December 1991 to identify areas of potential environmental concern. Based on the Phase I results, EMCON completed Phase II through IV site assessment activities by April 1993 under Dial Purchase Order No. B200003 to further define areas of potential environmental concern. These areas are described below for the South Parking Lot and Main Lot (see Attached Figure 1). The following is a summary of the assessment programs performed to date:

- Seven (7) underground storage tanks removed or abandoned (1983)
- 56 exploratory soil borings have been completed to depths between 0.5 foot and 76 feet below the ground surface (bgs)
- 10 groundwater monitoring wells have been installed in the South Parking Lot and Main Area
- 10 vapor extraction wells have been installed in the Main Area and South Parking Lot
- Semiannual groundwater sampling has been ongoing since April 1992
- Approximately 300 soil samples have been analyzed for analytes listed below

Soil and groundwater samples were analyzed using appropriate U.S. EPA methods, based on specific manufacturing or waste handling procedures employed by Dial in the vicinity of each sampling location. Soil analyses included the following:

- polychlorinated biphenyls (PCBs) by U.S. EPA Method 8080
- total petroleum hydrocarbons (TPH), modified for fuel characterization by U.S. EPA Method 8015 FC
- halogenated volatile organic compounds (VOCs) by U.S. EPA Method 8010/8240
- aromatic volatile organics (benzene, toluene, xylenes, and ethylbenzene: [BTXE]) by U.S. EPA Method 8020
- pH by U.S. EPA Method 9045

- total chromium by U.S. EPA Method 7190
- chlorides and phosphates by U.S. EPA Method 300.1
- phenolphthalein screen
- metals by U.S. EPA Method 6000/7000 Series
- formaldehyde by Method NCASI 487
- California Waste Extraction Test (WET) for thallium

Groundwater sample analyses included TPH modified for fuel characterization (U.S. EPA Method 8015 FC), VOCs (U.S. EPA Method 8010/8260) and phosphates and chlorides (U.S. EPA Method 300.0).

The site lies within the Central Ground Water Basin (Central Basin) of the Los Angeles Coastal Plain. Recognized aquifers beneath the site within the Central Basin include the Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation. Data published by the Los Angeles County Department of Public Works indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet bgs. Based on inspection of published data, groundwater at this elevation would be contained within the Exposition Aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data.

1.1 SOUTH PARKING LOT (9400 Rayo Avenue)

1.1.1 Soils

Fifteen (15) soil borings were drilled in the vicinity of a former iron pipe and fitting building which was previously located at the site. Soil samples collected from these borings were analyzed for compounds including CCR Title 22 metals, TPH and VOCs. As a result, an area of TPH-impacted soil was identified immediately southeast of the former pipe fitting building location (see attached Figure 2a).

Following vapor extraction testing using three wells installed in the area of impacted soils Dial requested that EMCON solicit bids for site remediation via excavation and off-site treatment/disposal. EMCON subsequently prepared a remedial action plan (RAP) which was sent to the Los Angeles County Fire Department Health and Hazardous Materials Division (LACFD) which concurred with the proposed remedial activities. The LACFD will also review and provide comments regarding our closure report which will be

completed and submitted following excavation activities. Since initial comments to the RAP were received from the LACFD, they have elected not to oversee the project and are referring the matter to the state. At this time the subcontractor is in place and the excavation project is waiting on authorization from Dial to proceed.

1.1.2 Groundwater

Monitoring wells MW-8, MW-9, and MW-10 were installed in the South Parking Lot Area to assess the nature and extent of VOC impacts to shallow groundwater beneath the site.

On the basis of historical monitoring and sampling data, an upgradient source of VOC-impacts to shallow groundwater is suspected, thus groundwater monitoring wells MW-8 and MW-10 have been excluded from the semiannual monitoring program.. In addition, VOCs were not detected above method reporting limits in soil samples collected from 15 borings drilled on the South Parking Lot. Monitoring well MW-9 was installed in a perched aquifer and has been dry over the recent monitoring periods.

1.2 MAIN AREA (9300 Rayo Avenue)

Soil borings were drilled at the Main Lot in three types of localities:

- shallow borings (approximately 3 feet deep) in areas with surface staining
- borings (up to approximately 15 feet deep) adjacent to sumps and clarifiers
- deeper borings (up to approximately 50 feet deep) adjacent to current and former underground storage tank locations

Areas identified with impacted soils include:

- the Former Storage Tank Area (TPH and VOCs)
- the Alkylate Unloading Area (dodecylbenzene)
- the Building 8 Former Fuel Tank (TPH)

1.2.1 Former Storage Tank Area and Old Garage

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993) (Figure 2). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet bgs in the old garage area to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. TPH were detected at

concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs. VOCs 1,2-dichloroethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in the old garage area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTXE- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. An initial long term vapor extraction test was conducted from October to December 1993. Over that period approximately 12,848 pounds of hydrocarbons were removed. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in late September as part of the VET to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program was reinitiated in January, 1995, using a 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage. The system has operated using a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5. Approximately 17,262 pounds of hydrocarbons have been removed from January to July, 1995. Benzene concentrations have declined from 52 ppmv in January to 2 ppmv in July 1995. VOCs have not been reported in influent vapor samples collected to date.

1.2.2 Alkylate Unloading Sump Area

Hydrocarbon impacted soils were detected adjacent to the sump. Based on information provided by Dial the compound present in these soils is thought to be dodecylbenzene, a product used in the manufacture of detergents. The dodecylbenzene-impacted soil has been characterized as nonhazardous according to the California Code of Regulations, Title 22. A risk assessment has been completed to support a no further action plan regarding further remediation of hydrocarbons at this portion of the site.

1.2.3 Building 8 Former Fuel-Oil Tank

Diesel-impacted soils were detected adjacent to the former fuel-oil tank. Based on the shallow depth EMCON completed a Leaking Underground Fuel Tank (LUFT) Risk Assessment and General Risk Appraisal, according to the California State Water Board

LUFT Manual guidelines. Based on this assessment impacted soils could be left inplace and not threaten shallow groundwater.

1.2.4 Groundwater

A total of five groundwater monitoring wells (MW-1, MW-2, MW-3, MW-6 and MW-7) were installed on site to characterize groundwater conditions beneath the site. Two additional wells (MW-4 and MW-5) were installed off site and upgradient to characterize groundwater quality entering the site.

Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2).

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 µg/L, respectively. Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 µg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 1). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7. On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 have been excluded from the semiannual monitoring program. Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells.

In the groundwater samples collected from wells MW-2, MW-6, and MW-7, several VOCs were reported slightly above laboratory method reporting limits. Of the VOCs detected in the groundwater samples from these wells none of the concentrations reported were above State Maximum Contaminant Levels for drinking water. Of the previously reported VOCs, 1,1-DCA, 1,2-DCA, TCE, 1,2-DCP and 1,2-DCE, in groundwater samples collected from wells MW-2, MW-6, and MW-7 concentrations were generally lower relative to the April, 1994 sampling event. The VOCs, TCA, 1,2,3-TCP, vinylchloride and acetone were not reported in groundwater samples collected from wells MW-6 and MW-7 in sampling events dating back to April 1992. Acetone is suspected to be a laboratory contaminant at the low concentration (trace) reported in the groundwater sample from well MW-2 and MW-7. The presence of the TCA, TCP, and vinylchloride is anomalous, as they have not been reported in soil samples collected from exploratory soil borings drilled at the site. Because of an apparent encroachment of VOCs in shallow groundwater under the western portion of the Main Facility and below the South Parking Lot an off-site source for TCA, TCP, and vinylchloride in groundwater samples from wells MW-6 and MW-7 maybe possible.

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

July 18, 1995
Project 0H93-001.05

Mr. Jim Ross
Section Chief - Site Cleanup Unit
California Regional Water Quality Control Board -
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Progress Report - First Quarter 1995
The Dial Corporation Main Facility
9300 Rayo Avenue
South Gate, California

Dear Mr. Ross:

In anticipation of selling the property, the Dial Corporation (Dial) has been evaluating the referenced Main Facility at 9300 Rayo Avenue in South Gate, California (see Figure 1). This letter is intended to provide notification to the California Regional Water Quality Control Board (RWQCB) of impacted groundwater beneath the Main Facility, discuss remedial activities performed to date, and present the results of a self-imposed semiannual groundwater sampling and quarterly gauging program. The letter was prepared to fulfill the reporting requirements regarding unauthorized release reporting contained in 23 CCR, Chapter 16, Section 2652(d).

BACKGROUND

The Main Facility was formerly used for soap and bleach manufacturing originally by the Purex Corporation, then later by Dial. The facility was operational from the 1920s until December 1991. Site assessment and remedial activities have been undertaken by EMCON on behalf of Dial, in a effort to prepare the property for sale. Dial initiated a Phase I Assessment to identify areas of concern where past activities could have impacted subsurface soil (Phase One, November 1991). Three subsequent phases of assessment (EMCON, August 5, 1992; April 9, 1993) have been initiated to assess the extent of petroleum hydrocarbon and halogenated volatile organic compound (VOC)-impacted soil and groundwater beneath the site.

The site lies within the Central Ground Water Basin (Central Basin) of the Los Angeles Coastal Plain. Recognized aquifers beneath the site within the Central Basin include the Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation (DWR, April, 1988). Data published by the Los Angeles County Department of Public Works (LACDPW, 1990) indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet below

the ground surface (bgs). Based on inspection of published data, groundwater at this elevation would be contained within the Exposition aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data (DWR, 1961).

Groundwater Assessment

To date, a total of seven groundwater monitoring wells (MW-1 through MW-7) have been installed at or nearby the Main Facility and three wells have been installed in the south parking lot area (Figure 2). Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2). Wells MW-8, MW-9, and MW-10 were installed in the south parking lot to assess groundwater conditions beneath the site and a suspected upgradient source of VOCs. Well completion details for these monitoring wells are presented in Table 1.

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 mg/L, respectively (Table 2). Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 mg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 2). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7 (EMCON, November 16, 1993).

On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 and MW-8, MW-9, and MW-10 have been excluded from the semiannual monitoring program (Table 2). Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells. Wells MW-8 and MW-10 also show a similar pattern with groundwater samples collected from these wells reportedly containing VOCs. In addition, VOCs were not detected above method reporting limits in soil samples collected from 15 borings drilled on the south parking lot. Monitoring well MW-9 was installed in a perched aquifer and was dry during the prior monitoring period (September 1994). Because of a suspected off-site source of VOC impacts in these areas, the above-mentioned wells have been excluded from the semiannual groundwater sampling program.

Soil Vapor Extraction

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet bgs in these areas to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons (TPH) were detected at concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs in this area of the old garage. VOCs 1,2-dichloro-ethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs in the area of the old garage (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in this area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTEX- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. An initial short-term soil vapor extraction program was initiated from October to December, 1993. As of December 1993, approximately 12,848 pounds of hydrocarbons had been removed using an internal combustion engine as the emissions control device. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in September to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program was reinitiated on January 26, 1995, using a Stealth Industries (SI 250) 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage (Figure 2). The system utilizes a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5. During the initial period beginning January 26, 1995 hydrocarbon vapors were drawn from all the wells. On February 22, 1995 vapors were drawn from wells VW-1, VW-3A&B and VW-5A&B, the others wells were closed due to declining hydrocarbon vapor readings. Additional wells were closed on March 22, 1995, again due to declining hydrocarbon vapor readings. Since March 22, 1995 wells VW-1 and VW-3A are being extracted from, all other wells are being used as air infiltration wells to increase oxygen concentrations in subsurface soils.

The period of February 2, 1995 through June 2, 1995, approximately 12,072 lbs of total volatile hydrocarbons as gasoline (TVH) and approximately 81 lbs of benzene were extracted from the wells and oxidized by the SI 250 unit in 2,213.2 hours of operation.

Halogenated VOCs only reported in the initial samples collected to the treatment system and have not been reported in samples collected during March, April, or May 1995. For a summary of the system mass removal data see Table 3, for a graphical representation see Charts 1 and 2.

The remedial effort, including the internal combustion engine (ICE) operation in 1993 and the SI 250, has removed 24,920 lbs of TVH as gasoline. Highest TVH concentration (C_5-C_{12} range) recorded during the remedial efforts is 36,000 ppmv, the latest TVH concentration is 2,200 ppmv.

SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

Groundwater samples were collected and selected wells were gauged on April 14, 1995. The groundwater gauging and sampling procedures and analytical methodologies and field data sheets are presented in Attachment 1. Certified analytical laboratory reports and chain-of-custody documentation and field data sheets are included in Attachment 2.

Groundwater levels were measured in monitoring wells MW-1 through MW-9 at depths ranging from 13.48 to 49.52 feet below the top of the well casing (Table 2). This depth range shows a water level rise of approximately 5 feet since historical monitoring began and is less than the estimated depth to regionally extensive groundwater beneath the site (95 feet) cited by the Los Angeles County Department of Public Works (LACDPW, April 1990).

This suggests that water beneath the site is contained in a perched or semiperched aquifer above the Exposition Aquifer. Groundwater flow beneath the site is in a southerly direction at a gradient of approximately 0.003 ft/ft (see Figure 2). The gradient and groundwater flow detection have remained the same since initiation of the groundwater sampling program.

Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-6A, MW-6B (duplicate well MW-6), and MW-7 and delivered to a state certified laboratory for analysis of TPH and VOC content. TPH concentrations of 0.058, 0.059, and 0.26 mg/L were reported in groundwater samples collected from wells MW-6A, MW-6B, and MW-7, respectively (Table 2). Benzene, toluene, xylenes, and ethylbenzene (BTXE) were detected in groundwater samples from wells MW-2, MW-6, and MW-7. Benzene concentrations in groundwater samples collected from these wells ranged from 1.4 µg/L (MW-2) to 70 ug/L in monitoring well MW-7 (Table 2). Halogenated VOCs including 1,1-dichloroethane (1,1-DCA; 2.1 ug/L), trichloroethene (TCE, 1.6 ug/L), 1,2-dichloropropane (1.4 ug/L), acetone (14 ug/L), and isopropylbenzene (0.3 ug/L) were reported in groundwater from well MW-7, which is centrally located on the former Dial facility. Groundwater from well MW-6, located approximately 60 feet east of

well MW-7 (Figure 2), contained 0.5 ug/L of 1,1-DCA. Halogenated VOCs were not reported in groundwater samples from upgradient and downgradient wells MW-1 and MW-2 (Table 2).

DISCUSSION

Groundwater samples collected from wells MW-2, MW-6A, MW-6B, MW-7 showed a decrease in benzene concentrations compared to the results of the previous sampling event. A trend that may be related to initiation of the SVE program and source removal in the area of the old garage.

Low concentrations of halogenated VOCs (1,1-DCA, TCE, and 1,2-dichloropropane) were detected in groundwater samples from monitoring wells MW-6A, MW-6B, and MW-7. Concentrations of these analytes were above the MRLs but below the State Maximum Contaminant Levels for Drinking Water. Benzene is the only compound reported in groundwater samples collected over the recent monitoring period at concentrations above State MCLs for drinking water.

The presence of TCA, TCP, and vinyl chloride in groundwater samples from wells MW-2 and MW-7 during the prior third quarter 1994 semiannual sampling event appears to be anomalous. These analytes were not detected in groundwater samples collected during this monitoring event. The source of these chlorinated VOCs is unknown at this time. These compounds were not reportedly used by Dial. Acetone was again reported present in groundwater from well MW-7 and is suspected to be a laboratory contaminant at the low concentration (trace).

Dial is aware that the RWQCB and other regulatory agencies are pursuing investigations of impacted groundwater in the site vicinity. In order to cooperate with these efforts, Dial is pleased to provide the locations of the monitoring wells and results of the groundwater analyses. The next semiannual groundwater sampling event is scheduled to occur during the Third Quarter of 1995.

If you have any questions please feel free to call me at (818) 841-1160.

Sincerely,

EMCON

Mark Kuncir
Geologist

Michael E. Flack
R.G. #5473
Project Manager

Attachments: References
Table 1 - Well Completion Details
Table 2 - Summary of Groundwater Analytical Results
Table 3 - Benzene and TVH Gasoline Mass Removal Data
Figure 1 - Site Location Map
Figure 2 - Groundwater Contour Map, December 1994
Chart 1 - TVH Concentration & Mass Removal vs. Operating Hours
Chart 2 - Benzene Concentration & Mass Removal vs. Operating Hours
Attachment 1 - Groundwater Gauging Procedures and Field Data Sheets
Attachment 2- Certified Analytical Laboratory Reports, Chain-of-Custody Documentation and Field Data Sheets

cc: Mr. Jay Sampat - The Dial Corporation

REFERENCES

DWR, April 1988, Planned Utilization of Groundwater Resources of The Central Plain of Los Angeles County - Bulletin 104 Groundwater Hydrogeology: Department of Water Resources, Sacramento, California.

EMCON, August 5, 1992, Phase II and III Subsurface Assessment Report - Main Facility: The Dial Corporation, 9300 Rayo Avenue, South Gate, California: EMCON Associates, Burbank, California.

EMCON, April 9, 1993, Phase IV Site Assessment Report, The Dial Corporation, Main Facility, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, July 6, 1993, Notification of Impacted Groundwater, The Dial Corporation, Main Facility at 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, November 16, 1993, Semi-Annual Groundwater Sampling and Analysis, The Dial Corporation, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

LACDPW, April 1990; Hydrologic Report 1988-89, Los Angeles Department of Public Works.

Phase One, November, 1991, Phase I Environmental Assessment for the Dial Corporation: Phase One Incorporated.

TABLES

Project H93-001.05

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-1	MW-2	MW-3	MW-4	MW-5
Date Installed	4/3/92	4/2/92	4/3/92	6/4/92	6/4/92
Well Permit	129589	129589	129589	verbal *	verbal *
Casing Material		Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Well Box Style	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton
A. Boring Diameter (inches)	10	10	10	10	10
B. Casing Diameter (inches)	4	4	4	4	4
C. Total Depth of Boring (feet)	65.5	70.5	72.0	76.0	75.0
D. Total Depth of Well (feet)	64.7	69.7	71.0	76.0	70.1
E. Top of Casing Elevation (feet)	107.69	105.65	107.24	106.39	109.71
F. Top of Well Box Elevation (feet)	108.11	105.92	107.95	106.95	110.14
G. Perforated Interval					
Perforation Size (inches)	0.020	0.020	0.020	0.020	0.020
Perforation Type	machine slot	machine slot	machine slot	machine slot	machine slot
Depth of Bottom (feet)	64.1	69.1	70.5	75.4	69.5
H. Depth of Top (feet)	44.6	49.6	50.9	45.6	40.0
Length (feet)	19.5	19.5	19.6	29.8	29.5
I. Surface Seal					
Material	concrete	concrete	concrete	concrete	concrete
Depth of Bottom (feet)	2.0	2.0	2.0	2.7	1.3
Depth of Top (feet)	0.0	0.0	0.0	0.0	0.0
Thickness (feet)	2.0	2.0	2.0	2.7	1.3
J. Backfill-Seal(s)					
Material	bentonite	bentonite	bentonite	bentonite	bentonite
Depth of Bottom (feet)	42.0	47.0	47.2	44.0	38.0
Depth of Top (feet)	2.0	2.0	2.0	2.7	1.3
Thickness (feet)	40.0	45.0	45.2	41.3	36.7
K. Gravel Pack(s)					
Material	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar
Depth to Bottom (feet)	64.7	69.7	71.0	76.0	70.1
Depth to Top (feet)	42.0	47.0	47.2	44.0	38.0
Thickness (feet)	22.7	22.7	23.8	32.0	32.1
L. Bottom Seal					
Material	native	native	native	- -	native
Depth of Bottom (feet)	65.5	70.5	72.0	- -	75.0
Depth of Top (feet)	64.7	69.7	71.0	- -	70.1
Thickness (feet)	0.8	0.8	1.0	- -	4.9

* vebal approval by Al Bragg, Los Angeles County Dept. of Public Works on 5/29/92

QA/QC:_____

Project H93-001.05

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-6		MW-7		MW-8	
Date Installed	8/19/92		8/19/92		8/19/92	
Well Permit	134051*		134051*		237706	
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0		10.0	
B. Casing Diameter (inches)	4.0		4.0		4.0	
C. Total Depth of Boring (feet)	70.0		70.0		76.5	
D. Total Depth of Well (feet)	70.0		68.5		75.0	
E. Top of Casing Elevation (feet)	106.88		107.01		107.07	
F. Top of Well Box Elevation (feet)	107.40		107.43		107.34	
G. Perforated Interval						
Perforation Size (inches)	0.0		0.0		0.0	
Perforation Type	machine slot		machine slot		machine slot	
Depth of Bottom (feet)	69.4		68.1		75.0	
H. Depth of Top (feet)	44.8		43.5		45.0	
Length (feet)	24.6		24.6		30.0	
I. Surface Seal						
Material	concrete		concrete		concrete	
Depth of Bottom (feet)	3.0		1.8		2.0	
Depth of Top (feet)	0.0		0.0		0.0	
Thickness (feet)	3.0		1.8		2.0	
J. Backfill-Seal(s)						
Material	volclay grout	bentonite	volclay grout	bentonite	volclay grout	bentonite
Depth of Bottom (feet)	39.0	42.0	36.0	39.6	41.0	43.0
Depth of Top (feet)	3.0	39.0	3.0	36.0	2.0	41.0
Thickness (feet)	36.0	3.0	33.0	3.6	39.0	2.0
K. Gravel Pack(s)						
Material	2/12 Lonestar		2/12 Lonestar		No. 3 Lonestar	
Depth to Bottom (feet)	70.0		68.7		76.5	
Depth to Top (feet)	42.0		39.6		43.0	
Thickness (feet)	28.0		29.1		33.5	
L. Bottom Seal						
Material	- -		native		--	
Depth of Bottom (feet)	- -		70.0		--	
Depth of Top (feet)	- -		68.7		--	
Thickness (feet)	- -		1.3		--	

* vebal approval by Al Bragg, Los An

QA/QC:_____

Project H93-001.05

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-9	MW-10	VW-1
Date Installed	8/19/92	8/19/92	8/17/92
Well Permit	237706	237706	NA
Casing Material	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Well Box Style	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton
A. Boring Diameter (inches)	10.0	10.0	10.0
B. Casing Diameter (inches)	4.0	4.0	4.0
C. Total Depth of Boring (feet)	41.5	76.5	51.0
D. Total Depth of Well (feet)	25.0	75.0	50.0
E. Top of Casing Elevation (feet)	107.35	107.25	NA
F. Top of Well Box Elevation (feet)	107.67	107.54	NA
G. Perforated Interval			
Perforation Size (inches)	0.0	0.0	0.02
Perforation Type	machine slot	machine slot	machine slot
Depth of Bottom (feet)	25.0	75.0	50.0
H. Depth of Top (feet)	5.0	45.0	5.0
Length (feet)	20.0	30.0	45.0
I. Surface Seal			
Material	concrete	concrete	concrete
Depth of Bottom (feet)	2.5	2.0	2.0
Depth of Top (feet)	0.0	0.0	0.0
Thickness (feet)	2.5	2.0	2.0
J. Backfill-Seal(s)			
Material	-- bentonite	volclay grout bentonite	bentonite
Depth of Bottom (feet)	-- 4.0	41.0 43.0	5.0
Depth of Top (feet)	-- 2.5	2.0 41.0	2.0
Thickness (feet)	-- 1.5	39.0 2.0	3.0
K. Gravel Pack(s)			
Material	No. 3 Lonestar	No. 3 Lonestar	2/12 Lonestar
Depth to Bottom (feet)	25.0	76.5	51.0
Depth to Top (feet)	4.0	43.0	5.0
Thickness (feet)	21.0	33.5	46.0
L. Bottom Seal			
Material	native	--	native
Depth of Bottom (feet)	41.5	--	51.0
Depth of Top (feet)	25.0	--	50.0
Thickness (feet)	16.5	--	1.0

* vebal approval by Al Bragg, Los An

QA/QC:_____

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-2		VW-3	
Date Installed	8/18/92		8/18/92	
Well Permit	NA		NA	
Casing Material	Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0	
B. Casing Diameter (inches)	2.0		2.0	
C. Total Depth of Boring (feet)	51.0		51.0	
D. Total Depth of Well (feet)	50.0		50.0	
E. Top of Casing Elevation (feet)	NA		NA	
F. Top of Well Box Elevation (feet)	NA		NA	
G. Perforated Interval				
Perforation Size (inches)	0.02		0.02	
Perforation Type	machine slot		machine slot	
Depth of Bottom (feet)	35.0	50.0	35.0	50.0
H. Depth of Top (feet)	5.0	40.0	5.0	40.0
Length (feet)	30.0	10.0	30.0	10.0
I. Surface Seal				
Material	concrete		concrete	
Depth of Bottom (feet)	2.0		2.0	
Depth of Top (feet)	0.0		0.0	
Thickness (feet)	2.0		2.0	
J. Backfill-Seal(s)				
Material	bentonite		bentonite	
Depth of Bottom (feet)	5.0	40.0	5.0	40.0
Depth of Top (feet)	2.0	35.0	2.0	35.0
Thickness (feet)	3.0	5.0	3.0	5.0
K. Gravel Pack(s)				
Material	2/12 Lonestar		2/12 Lonestar	
Depth to Bottom (feet)	35.0	51.0	35.0	51.0
Depth to Top (feet)	5.0	40.0	5.0	40.0
Thickness (feet)	30.0	11.0	30.0	11.0
L. Bottom Seal				
Material	native		native	
Depth of Bottom (feet)	51.0		51.0	
Depth of Top (feet)	50.0		50.0	
Thickness (feet)	1.0		1.0	

* vebal approval by Al Bragg, Los An

Project H93-001.05

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-4		VW-5		VW-6
Date Installed	8/17/92		8/17/92		8/17/92
Well Permit	NA		NA		NA
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton
A. Boring Diameter (inches)	10.0		10.0		10.0
B. Casing Diameter (inches)	2.0		2.0		4.0
C. Total Depth of Boring (feet)	51.0		51.0		51.0
D. Total Depth of Well (feet)	50.0		50.0		50.0
E. Top of Casing Elevation (feet)	NA		NA		NA
F. Top of Well Box Elevation (feet)	NA		NA		NA
G. Perforated Interval					
Perforation Size (inches)	0.02		0.02		0.02
Perforation Type	machine slot		machine slot		machine slot
Depth of Bottom (feet)	30.0	50.0	35.0	50.0	50.0
H. Depth of Top (feet)	5.0	35.0	5.0	40.0	5.0
Length (feet)	25.0	15.0	30.0	10.0	45.0
I. Surface Seal					
Material	concrete		concrete		concrete
Depth of Bottom (feet)	2.0		2.0		2.0
Depth of Top (feet)	0.0		0.0		0.0
Thickness (feet)	2.0		2.0		2.0
J. Backfill-Seal(s)					
Material	bentonite		bentonite		bentonite
Depth of Bottom (feet)	5.0	35.0	5.0	40.0	5.0
Depth of Top (feet)	2.0	30.0	2.0	35.0	2.0
Thickness (feet)	3.0	5.0	3.0	5.0	3.0
K. Gravel Pack(s)					
Material	2/12 Lonestar		2/12 Lonestar		2/12 Lonestar
Depth to Bottom (feet)	30.0	51.0	35.0	51.0	51.0
Depth to Top (feet)	5.0	35.0	5.0	40.0	5.0
Thickness (feet)	25.0	16.0	30.0	11.0	46.0
L. Bottom Seal					
Material	native		native		native
Depth of Bottom (feet)	51.0		51.0		51.0
Depth of Top (feet)	50.0		50.0		50.0
Thickness (feet)	1.0		1.0		1.0

* vebal approval by Al Bragg, Los An

QA/QC:_____

Table 1
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-7		
Date Installed	8/17/92		
Well Permit	NA		
Casing Material	Sch 40 PVC		
Well Box Style	EMCO-Wheaton		
A. Boring Diameter (inches)	10.0		
B. Casing Diameter (inches)	2.0		
C. Total Depth of Boring (feet)	51.0		
D. Total Depth of Well (feet)	50.0		
E. Top of Casing Elevation (feet)	NA		
F. Top of Well Box Elevation (feet)	NA		
G. Perforated Interval			
Perforation Size (inches)	0.02		
Perforation Type	machine slot		
Depth of Bottom (feet)	15.0	30.0	50.0
H. Depth of Top (feet)	5.0	20.0	35.0
Length (feet)	10.0	10.0	15.0
I. Surface Seal			
Material	concrete		
Depth of Bottom (feet)	2.0		
Depth of Top (feet)	0.0		
Thickness (feet)	2.0		
J. Backfill-Seal(s)			
Material	bentonite		
Depth of Bottom (feet)	5.0	20.0	35.0
Depth of Top (feet)	2.0	15.0	30.0
Thickness (feet)	3.0	5.0	5.0
K. Gravel Pack(s)			
Material	2/12 Lonestar		
Depth to Bottom (feet)	15.0	30.0	51.0
Depth to Top (feet)	5.0	20.0	35.0
Thickness (feet)	10.0	10.0	16.0
L. Bottom Seal			
Material	native		
Depth of Bottom (feet)	51.0		
Depth of Top (feet)	50.0		
Thickness (feet)	1.0		

* vebal approval by Al Bragg, Los An

TABLE 2
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Aromatic Compounds				Chlorinated Volatile Organic Compounds			
					Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-1	20-Apr-92	51.45	56.24	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(107.69)	11-Sep-92	52.00	55.69	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	50.90	56.79	Water level only								
	30-Sep-93	49.95	57.74	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	48.39	59.30	<0.5	<0.3	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
	29-Sep-94	47.22	60.47	<0.04	<0.3	**1**	<0.5	**0.8**	<0.4	<0.3	<0.4	<0.3
	19-Dec-94	46.87	60.82	Water level only								
	14-Apr-95	46.08	61.61	<0.04	<0.3	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
MW-2	20-Apr-92	52.73	52.92	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(105.65)	11-Sep-92	52.60	53.05	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	51.17	54.48	Water level only								
	30-Sep-93	49.84	55.81	<0.05	**4**	**0.5**	<0.5	**0.8**	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	47.74	57.91	<0.5	**2.5**	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
	29-Sep-94 (6)	46.73	58.92	<0.04	**2**	4	**0.5**	**4**	**0.4 tr**	<0.3	<0.4	<0.3
	19-Dec-94	46.28	59.37	Water level only								
	04-Apr-09	45.50	60.15	<0.04	**1.4**	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
MW-3	20-Apr-92	53.80	53.44	NA	NA	NA	NA	NA	<0.5	<0.5	**26**	<0.5
(107.24)	19-Mar-93	53.83	53.41	Water level only								
	19-Mar-93	52.30	54.94	Water level only								
	30-Sep-93	51.06	56.18	Water level only								
	05-Apr-94	49.15	58.09	Water level only								
	28-Sep-94	48.23	59.01	Water level only								
	19-Dec-94	47.81	59.43	Water level only								
	14-Apr-95	47.04	60.20	Water level only								
MW-4	20-Apr-92	52.40	53.99	NA	NA	NA	NA	NA	<0.5	**0.6**	**28**	<0.5
(106.39)	05-Jun-92	52.59	53.80	Water level only								
	19-Mar-93	51.23	55.16	Water level only								
	30-Sep-93	49.96	56.43	Water level only								
	05-Apr-94	47.95	58.44	Water level only								
	28-Sep-94	47.00	59.39	Water level only								
	19-Dec-94	46.67	59.72	Water level only								
	14-Apr-95	45.88	60.51	Water level only								

TABLE 2
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Aromatic Compounds				Chlorinated Volatile Organic Compounds			
					Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-5	20-Apr-92	56.00	53.71	NA	NA	NA	NA	NA	<5*	<5*	1,400	<5*
(109.71)	05-Jun-92	56.21	53.50	Water level only								
	19-Mar-93	54.95	54.76	Water level only								
	30-Sep-93	53.62	56.09	Water level only								
	05-Apr-94	51.68	58.03	Water level only								
	28-Sep-94	50.73	58.98	Water level only								
	19-Dec-94	50.31	59.40	Water level only								
	14-Apr-95	49.52	60.19	Water level only								
MW-6	11-Sep-92	53.07	53.81	<0.5	5.8	<5	<5	<5	<5	<5	<5	<5
(106.88)	19-Mar-93	51.80	55.08	Water level only								
	30-Sep-93	50.47	56.41	0.1	48	2	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	48.54	58.34	<0.5	53	1.6	0.5	0.7	0.7	0.7	<0.4	<0.3
	29-Sep-94	47.49	59.39	0.25	54	5	0.8	2	0.8	<0.3	0.4 tr	<0.3
	19-Dec-94	47.06	59.82	Water level only								
MW-6A	14-Apr-09	46.33	60.55	0.058	27	1.4	<0.5	<0.6	0.5	<0.3	<0.4	<0.3
MW-6B(8)	14-Apr-95	46.33	60.55	0.059	23	1.2	<0.5	<0.6	0.5	<0.3	<0.4	<0.3
MW-7	11-Sep-92	53.17	53.84	<0.5	10	5.9	<5	<5	<5	<5	<5	<5
(107.01)	19-Mar-93	52.11	54.90	Water level only								
	30-Sep-93	50.86	56.15	0.3	120	3	2	3	1.3	0.6	0.6	2.0
	06-Apr-94 (4)	48.70	58.31	0.6	230	5	4.8	3.7	2.7	1.1	1.8	1.8
	29-Sep-94 (7)	47.71	59.30	0.61	250	9	5	6	3	<0.3	<0.4	<0.3
	19-Dec-94	47.33	59.68	Water level only								
	14-Apr-95(9)	46.48	60.53	0.26	70	3.9	1.3	2	2.1	<0.3	1.6	1.4
MW-8	19-Mar-93 (5)	52.97	54.10	NA	<0.5	<0.5	<0.5	<1	<0.5	0.9	200	<0.5
(107.07)	05-Apr-94	49.76	57.31	Water level only								
	28-Sep-94	48.83	58.24	Water level only								
	19-Dec-94	48.38	58.69	Water level only								
	14-Apr-95	47.54	59.53	Water level only								
MW-9	19-Mar-93	10.23	97.12	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
(107.35)	05-Apr-94	dry	--	Water level only								
	28-Sep-94	dry	--	Water level only								

TABLE 2
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Aromatic Compounds				Chlorinated Volatile Organic Compounds			
					Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-9	19-Dec-94	dry	- -	Water level only								
(Cont.)	14-Apr-95	13.48	93.87	Water level only								
MW-10	19-Mar-93	53.26	53.75	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	11	<0.5
(107.25)	05-Apr-94	- -	- -	Water level only	No site access							
	28-Sep-94	- -	- -	Water level only	No site access							
	19-Dec-94	- -	- -	Water level only	No site access							
	14-Apr-95	47.92	59.33	Water level only	No site access							
TB	14-Apr-95	- -	- -	NA	<0.3	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
Maximum Contaminant Levels for 22 CCR, Article 5.5, Section 64444-A for drinking water					1	150	700	1,750	5	0.5	5	5

Notes:
Samples analzed by Golden State/CAS Laboratories Inc., Canoga Park, California.
NA = Not analyzed.
* = Method reporting limit elevated because the sample required diluting.
tr = Trace Level
MSL = Mean Sea Level

(1) Analyzed by U.S. EPA Method 8015 (modified).
(2) Analyzed by U.S. EPA Method 8020.
(3) Analyzed by U.S. EPA Methods 8010 / 8240 / 8260.
(4) Other VOCs by EPA Method 8260 detected were cis-1,2-Dichloroethene (1.0 µg/L) and Chloroform (2.3 µg/L).
(5) Other VOCs by EPA Method 8260 detected were trans-1,2-Dichloroethene (4 µg/L) and cis-1,2-Dichloroethene (89 µg/L).
(6) Other VOCs by EPA Method 8260 detected were Acetone (5 µg/L tr) and 1,1,1-Trichloroethane (0.7 µg/L).
(7) Other VOCs by EPA Method 8260 detected were Chloroform (0.7 µg/l), 1,1,-Dichloroethylene (0.4 µg/L tr), cis-1,2-Dichloroethylene (2 µg/L), 1,2,3-Trichloropropane (2 µg/L), Vinyl Chloride (0.5 µ Acetone (3 µg/L) and Isopropylbenzene (0.4 µg/L tr).
(8) MW-6B is a duplicate sample taken from well MW-6
(9) Other VOCs by EPA Method 8260 detected were Chloroform (0.4 µg/L tr); cis-1,2-Dichloroethylene (1.0 µg/L); Ethylbenzene (1.3 µg/L); Toluene (3.9 µg/L); Total Xylenes (2.0 µg/L); Acetone (14 µg/L tr); Hexachlorobutadiene (0.3 µg/L tr); Naphthalene (0.5 µg/L)
Certified analytical report for the recent semi-annual event is included as an Attachment 2.

QA/QC:_____

Table 3
Former Dial Corporation Facility
9300 East Rayo Avenue, South Gate, California

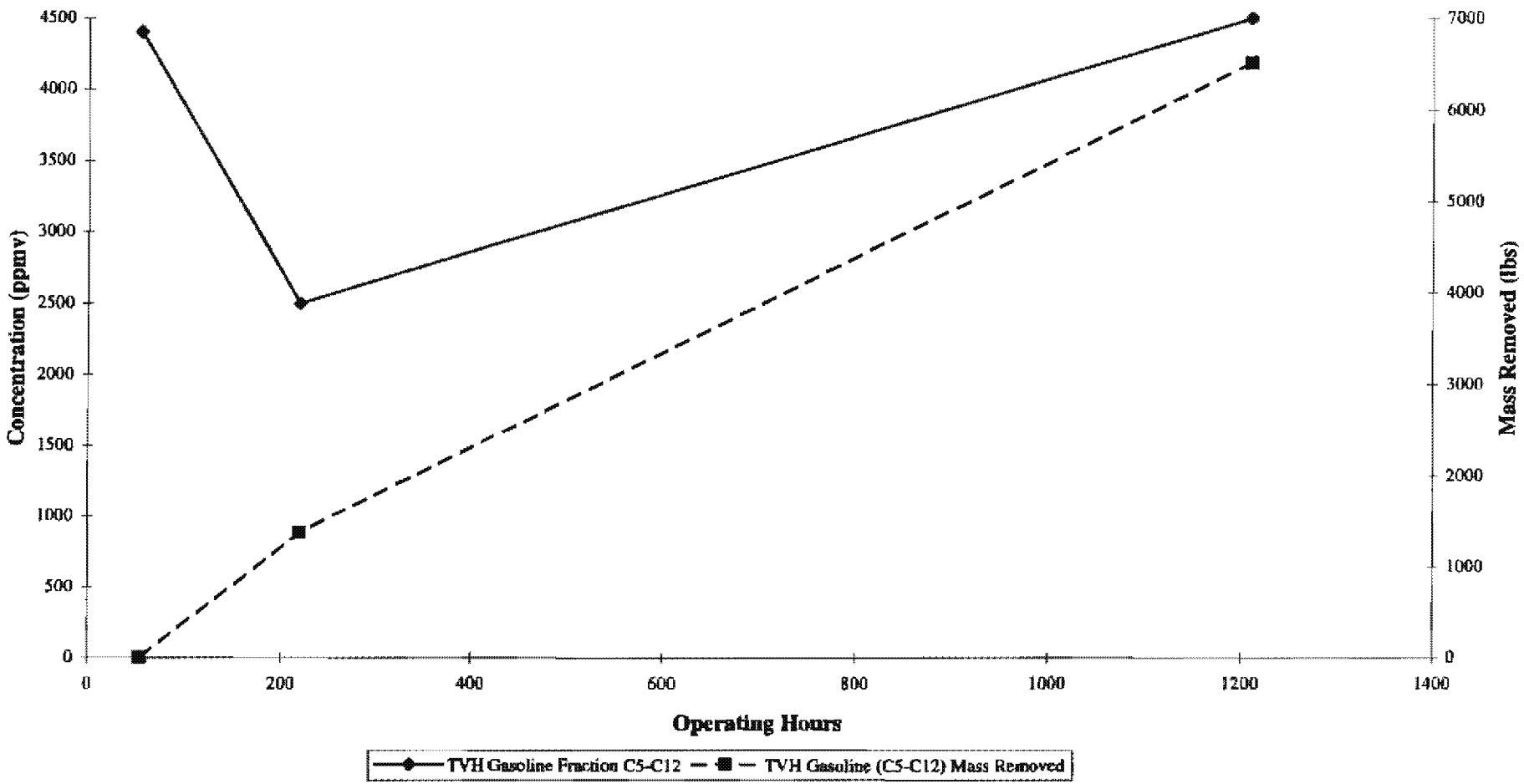
Vapor Extraction Laboratory Analytical Results											
Sampling Date	Cumulative Operational Hrs.	Process Flow Rate (SCFM)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	Total Volatile Hydrocarbons (ppmv)	C1 to C4 Hydrocarbons (ppmv)	C5 to C8 Hydrocarbons (ppmv)	C9 to C12 Hydrocarbons (ppmv)	TVH Gasoline C5 to C12 (ppmv)
2/1/95	54.3	159	52	83	31	100	4600	310	3000	1400	4400
2/8/95	219.8	162	40	81	18	105	3600	1100	2500	0	2500
3/28/95	1211.2	35	27	100	36	120	4600	100	2700	1800	4500

Notes
* = Same as above
N/A = Not Analyzed

OH93-001.006

Chart-1
Former Dial Corporation Facility
9300 East Rayo Avenue, South Gate, California

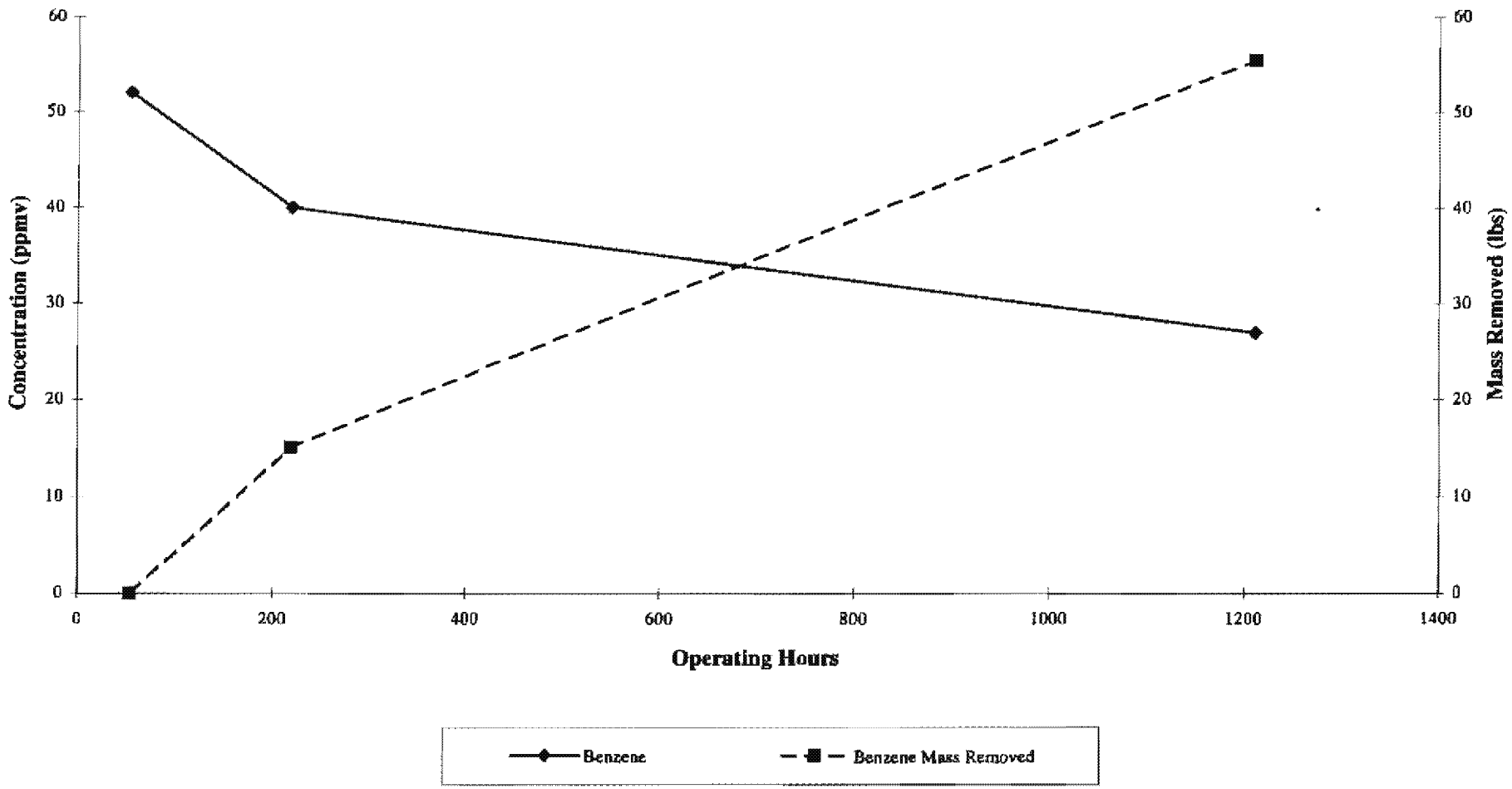
TVH Concentration & Mass Removed vs Operating Hours



OH93-001.006

Chart-2
Former Dial Corporation Facility
9300 East Rayo Avenue, South Gate, California

Benzene Concentration & Mass Removed vs Operating Hours



OH93-001.006

FIGURES

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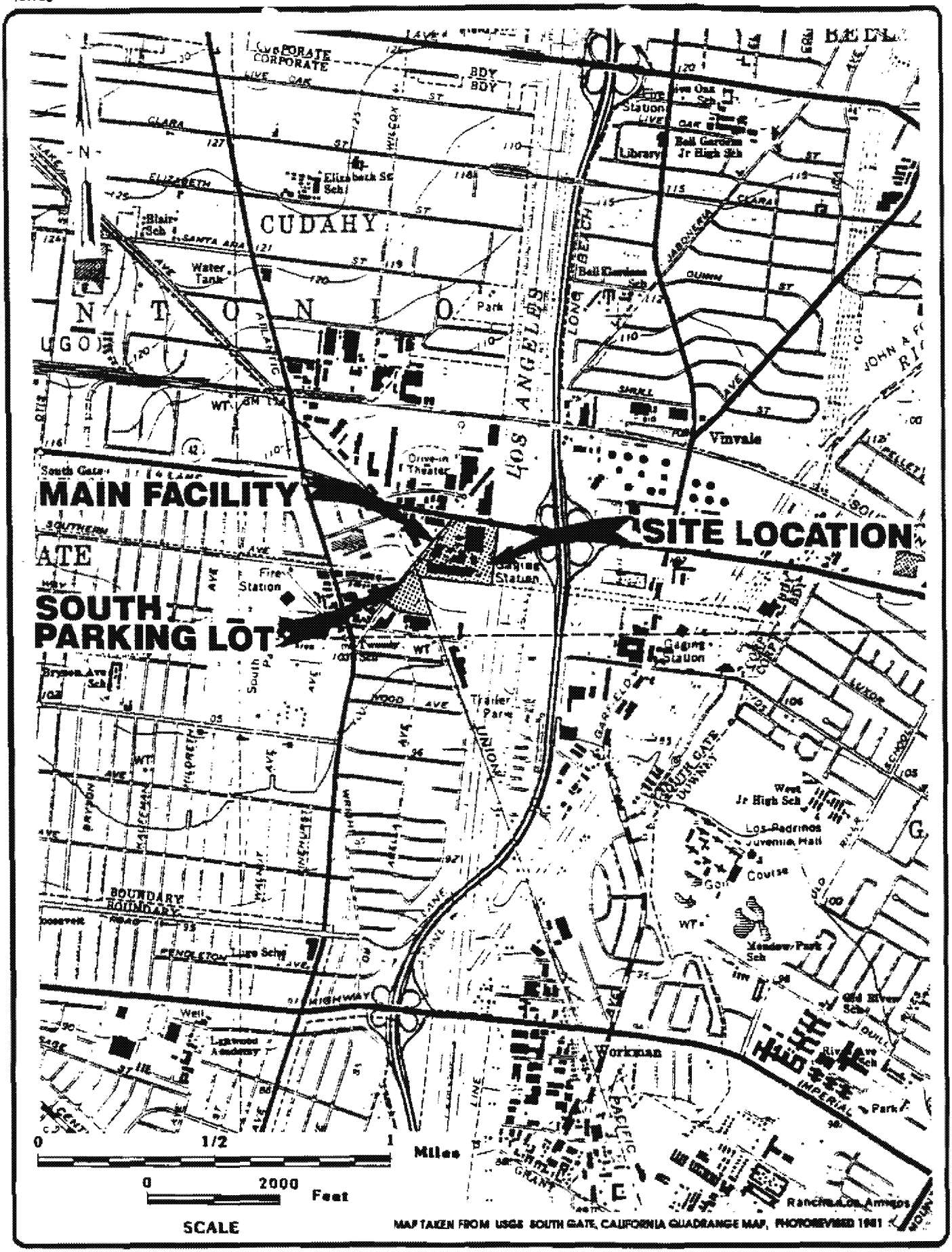


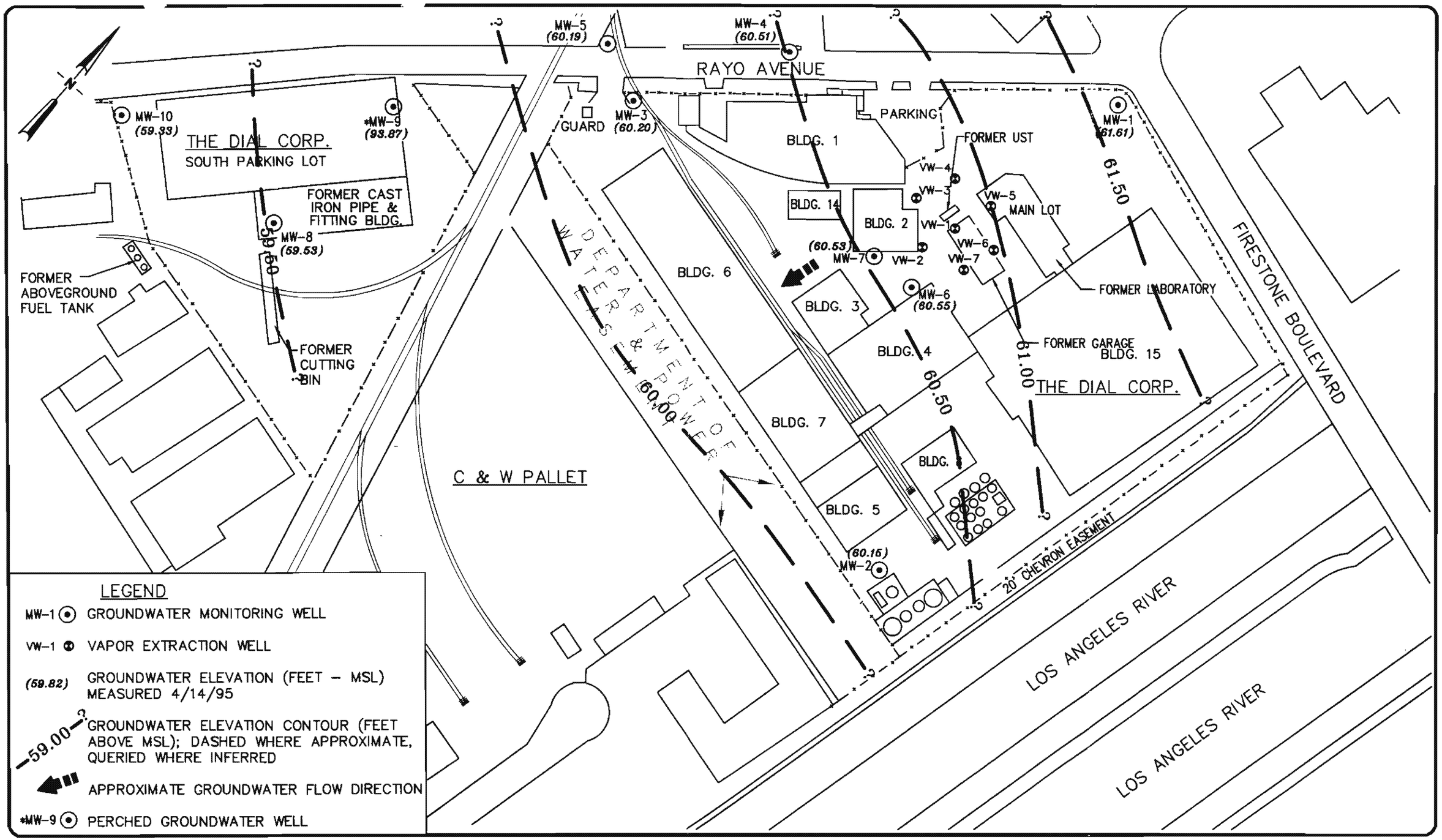
EMCON Associates

THE DIAL CORPORATION
9300 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE LOCATION MAP

FIGURE 1

PROJECT NO. 0H93-001.04



EMCON

0 50 100 FEET
SCALE

THE DIAL CORPORATION
9300 & 9400 RAYO AVENUE
MAIN LOT – SOUTH PARKING LOT
SOUTH GATE, CALIFORNIA

GROUNDWATER CONTOUR MAP, APRIL, 1995

FIGURE
2
PROJECT NO.
0H93-001.05

CADD FILE: 0495-GEC
DATE LAST REVISED: 06/08/95

ATTACHMENT 1

GROUNDWATER GAUGING PROCEDURES AND FIELD DATA SHEETS

ATTACHMENT 1

GROUNDWATER GAUGING PROCEDURES AND FIELD DATA SHEETS

Prior to collecting a groundwater sample, the depth to water and well depth in the site wells, including those not scheduled for sampling, were measured using an electronic sounder. The measurements were taken from a surveyed reference point and were read to the nearest 0.01 foot. Using a submersible pump, each well was purged a minimum of three casing volumes of water. During pumping, purged water was monitored for temperature, pH, and specific conductance to assess if formation water has entered the well. A minimum of three measurements were collected within the calculated purge volume. For low yield wells where recovery exceeds 2 hours, the well was evacuated to dryness once.

When the above-described parameters were stabilized, the water level in the well was allowed to recover to approximately static conditions. After recovery, representative groundwater samples were collected from each well using a Teflon bailer. These samples were collected and placed into 40 ml VOA containers, supplied by the laboratory, with the appropriate preservative. After collection and placement into the VOA containers, the groundwater samples were labeled and stored in an ice-cooled, insulated container and transported to a California-certified laboratory along with appropriate chain-of-custody documentation. Groundwater produced during well purging was contained in sealed Department of Transportation-approved 55-gallon steel drums. The drums were labeled and retained on site pending consideration of appropriate disposal options.

Equipment that was used to collect or come into contact with the groundwater in each well was thoroughly steam cleaned and was rinsed with deionized water. Cleaning of the equipment occurred before sampling began, between each well, and upon completion of the sampling program. A new bailer cord was used for each well sample and was discarded after the completion of the sampling program.

Groundwater samples were collected and analyzed for the following:

Analyte	Method	Detection Limit
Total petroleum hydrocarbons (TPH)	California DTSC Draft LUFT Method	0.50 mg/l
Volatile Organic Compounds (VOCs)	U.S. EPA Method 8260	0.1 to 10 µg/l

Groundwater samples collected followed chain-of-custody documentation procedures from sample collection to final analysis (Attachment 2). The group of groundwater samples collected were accompanied by completed laboratory analysis request forms that included information as to the date and time sample was collected, sample name, sample identification, and sample type.

ATTACHMENT 2

CERTIFIED ANALYTICAL LABORATORY REPORTS, CHAIN-OF-CUSTODY DOCUMENTATION AND FIELD DATA SHEETS

GOLDEN STATE/CAS
LABORATORIES, INC.

April 25, 1995

Mike Flack
EMCON Associates
3300 North San Fernando Blvd.
Burbank, CA 91504

Re: **Dial Corp-South Gate/Project #H93-005.01**

Dear Mike:

Enclosed are the results of the samples submitted to our lab on April 17, 1995. For your reference, these analyses have been assigned our service request number L952055.

All analyses were performed in accordance with our laboratory's quality assurance program. Golden State / CAS is certified for environmental analyses by the California Department of Health Services (Certificate # 1296/Expiration - August 1996).

Please call if you have any questions.

Respectfully submitted,

Golden State / CAS Laboratories, Inc.

Eydie Schwartz for

Elaine R. Thomas
Project Chemist

ET/kr

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM FOR PETROLEUM HYDROCARBONS

Laboratory Name:	Golden State / CAS Laboratories, Inc.
Address:	6925 Canoga Avenue, Canoga Park, CA 91303
Telephone:	(818) 587-5550
Laboratory Certification (ELAP) No.:	1296
Expiration Date:	August 1996
Laboratory Director's Name:	Dr. B. Gene Bennett
Laboratory Director's Signature:	Cydie Schwartz for Dr. B Gene Bennett
Client:	EMCON
Project No.:	Dial Corp-South Gate/#H93-005.01
Analytical Method:	EPA Method 8260
Date Sampled:	04/14/95
Date Received:	04/17/95
Date Reported:	04/25/95
Sample Matrix:	Water
Chain of Custody Received:	Yes
Sample Condition:	
--Sample Headspace Description (%):	0% Headspace
--Sample Container Material:	VOA Vial

* California Department of Health Services LUFT Method

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM FOR PETROLEUM HYDROCARBONS

Laboratory Name:	Golden State / CAS Laboratories, Inc.
Address:	6925 Canoga Avenue, Canoga Park, CA 91303
Telephone:	(818) 587-5550
Laboratory Certification (ELAP) No.:	1296
Expiration Date:	August 1996
Laboratory Director's Name:	Dr. B. Gene Bennett
Laboratory Director's Signature:	Eydie Schwartz for Dr. B. Gene Bennett
Client:	EMCON
Project No.:	Dial Corp-South Gate/#H93-005.01
Analytical Method:	EPA Method 8015(Modified)*
Date Sampled:	04/14/95
Date Received:	04/17/95
Date Reported:	04/25/95
Sample Matrix:	Water
Chain of Custody Received:	Yes
Sample Condition:	
--Sample Headspace Description (%):	0% Headspace
--Sample Container Material:	VOA Vial

* California Department of Health Services LUFT Method

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005 01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

	Sample Name:	**Method Blank**	**MW-1**	**MW-2**
	Lab Code:	L952055-MB	L952055-001	L952055-002
	*Date Analyzed:	4/19/95	4/19/95	4/19/95
	Dilution Factor:	1	1	1
Analyte	**MDL**			
Bromobenzene	0.2	ND	ND	ND
Bromochloromethane	0.4	ND	ND	ND
Bromodichloromethane	0.2	ND	ND	ND
Bromoform	0.2	ND	ND	ND
Bromomethane	0.3	ND	ND	ND
Carbon Disulfide	1	ND	ND	ND
Carbon tetrachloride	0.3	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Chloroform	0.3	ND	ND	ND
Chloromethane	0.5	ND	ND	ND
Dibromochloromethane	0.2	ND	ND	ND
Dibromomethane	0.2	ND	ND	ND
Dichloromethane (Methylene Chloride)	2	ND	ND	ND
Dichlorodifluoromethane	0.3	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	0.4	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	0.3	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	0.3	ND	ND	ND
trans-1,2-Dichloroethylene	0.4	ND	ND	ND
cis-1,2-Dichloroethylene	0.2	ND	ND	ND
1,2-Dichloropropane	0.3	ND	ND	ND
cis-1,3-Dichloropropylene	0.2	ND	ND	ND
trans-1,3-Dichloropropylene	0.2	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.2	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2	ND	ND	ND
Tetrachloroethylene(PCE)	0.4	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	0.3	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	0.2	ND	ND	ND
Trichloroethylene (TCE)	0.4	ND	ND	ND
1,2,3-Trichloropropane	0.3	ND	ND	ND
Trichlorofluoromethane	0.3	ND	ND	ND
Vinyl Chloride (VC)	0.4	ND	ND	ND
Benzene	0.3	ND	ND	1.4
Chlorobenzene	0.5	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND
1,3-Dichlorobenzene	0.6	ND	ND	ND
1,4-Dichlorobenzene	0.2	ND	ND	ND

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
***** Date Analyzed using purge and trap technology (EPA Method 5030)

Approved By: Eydie Schwartz Date: 4/25/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587 5550 ■ FAX 818 587 5555

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

		Sample Name:	**Method Blank**	**MW-1**	**MW-2**
		Lab Code:	L952055-MB	L952055-001	L952055-002
		*Date Analyzed:	4/19/95	4/19/95	4/19/95
		Dilution Factor:	1	1	1
Analyte		**MDL**			
Ethyl benzene		0.5	ND	ND	ND
Toluene		0.4	ND	ND	ND
Total Xylenes		0.6	ND	ND	ND
Acetone		10	ND	ND	ND
n-Butylbenzene		0.1	ND	ND	ND
sec-Butylbenzene		0.2	ND	ND	ND
tert-Butylbenzene		0.2	ND	ND	ND
2-Chloroethylvinyl ether		0.3	ND	ND	ND
2-Chlorotoluene		0.2	ND	ND	ND
4-Chlorotoluene		0.2	ND	ND	ND
1,3-Dichloropropane		0.3	ND	ND	ND
2,2-Dichloropropane		0.3	ND	ND	ND
1,1-Dichloropropylene		0.3	ND	ND	ND
Ethylene dibromide (EDB)		0.3	ND	ND	ND
Hexachlorobutadiene		0.4	ND	ND	ND
Isopropylbenzene		0.1	ND	ND	ND
p-Isopropyltoluene		0.2	ND	ND	ND
Methyl Ethyl Ketone		2	ND	ND	ND
Methyl Isobutyl Ketone		3	ND	ND	ND
Naphthalene		0.4	ND	ND	ND
n-Propylbenzene		0.2	ND	ND	ND
Styrene		0.1	ND	ND	ND
1,2,3-Trichlorobenzene		0.2	ND	ND	ND
1,2,4-Trichlorobenzene		0.2	ND	ND	ND
1,2,4-Trimethylbenzene		0.1	ND	ND	ND
1,3,5-Trimethylbenzene		0.2	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane		2	ND	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)		0.2	ND	ND	ND
Surrogate	**SPK CONC**	**ACP%**	**%RC**	**%RC**	**%RC**
Pentafluorobenzene	25	70-130	104	104	100
Toluene-D_8	25	88-120	108	111	110
4-Bromofluorobenzene	25	86-115	104	103	103

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
SPK CONC = Spike Concentration; ACP% = Acceptable Range of Percent; %RC = % Recovery
* Date Analyzed using purge and trap technology (EPA Method 5030)
TR Trace Level

Approved By: Eydie Schwartz Date: 4/25/95

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L952055.XLS - wb8260w 7/5/95

Page No

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

	Sample Name:	MW-6A	MW-6B	MW-7
	Lab Code:	L952055-003	L952055-004	L952055-005
	*Date Analyzed:	4/19/95	4/19/95	4/19/95
	Dilution Factor:	1	1	1
Analyte	**MDL**			
Bromobenzene	0.2	ND	ND	ND
Bromochloromethane	0.4	ND	ND	ND
Bromodichloromethane	0.2	ND	ND	ND
Bromoform	0.2	ND	ND	ND
Bromomethane	0.3	ND	ND	ND
Carbon Disulfide	1	ND	ND	ND
Carbon tetrachloride	0.3	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Chloroform	0.3	ND	ND	0.4(tr)
Chloromethane	0.5	ND	ND	ND
Dibromochloromethane	0.2	ND	ND	ND
Dibromomethane	0.2	ND	ND	ND
Dichloromethane (Methylene Chloride)	2	ND	ND	ND
Dichlorodifluoromethane	0.3	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	0.4	0.5	0.5	2.1
1,2-Dichloroethane (1,2-DCA)	0.3	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	0.3	ND	ND	ND
trans-1,2-Dichloroethylene	0.4	ND	ND	ND
cis-1,2-Dichloroethylene	0.2	ND	ND	1.0
1,2-Dichloropropane	0.3	ND	ND	1.4
cis-1,3-Dichloropropylene	0.2	ND	ND	ND
trans-1,3-Dichloropropylene	0.2	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.2	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2	ND	ND	ND
Tetrachloroethylene(PCE)	0.4	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	0.3	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	0.2	ND	ND	ND
Trichloroethylene (TCE)	0.4	ND	ND	1.6
1,2,3-Trichloropropane	0.3	ND	ND	ND
Trichlorofluoromethane	0.3	ND	ND	ND
Vinyl Chloride (VC)	0.4	ND	ND	ND
Benzene	0.3	27	23	70
Chlorobenzene	0.5	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND
1,3-Dichlorobenzene	0.6	ND	ND	ND
1,4-Dichlorobenzene	0.2	ND	ND	ND

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
***** Date Analyzed using purge and trap technology (EPA Method 5030)
TR Trace Level

Approved By: Eydie Schwartz Date: 4/25/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

		Sample Name:	**MW-6A**	**MW-6B**	**MW-7**
		Lab Code:	L952055-003	L952055-004	L952055-005
		*Date Analyzed:	4/19/95	4/19/95	4/19/95
		Dilution Factor:	1	1	1
Analyte		**MDL**			
Ethyl benzene		0.5	ND	ND	1.3
Toluene		0.4	1.4	1.2	3.9
Total Xylenes		0.6	ND	ND	2.0
Acetone		10	ND	ND	14(tr)
n-Butylbenzene		0.1	ND	ND	ND
sec-Butylbenzene		0.2	ND	ND	ND
tert-Butylbenzene		0.2	ND	ND	ND
2-Chloroethylvinyl ether		0.3	ND	ND	ND
2-Chlorotoluene		0.2	ND	ND	ND
4-Chlorotoluene		0.2	ND	ND	ND
1,3-Dichloropropane		0.3	ND	ND	ND
2,2-Dichloropropane		0.3	ND	ND	ND
1,1-Dichloropropylene		0.3	ND	ND	ND
Ethylene dibromide (EDB)		0.3	ND	ND	ND
Hexachlorobutadiene		0.4	ND	ND	ND
Isopropylbenzene		0.1	ND	ND	0.3(tr)
p-Isopropyltoluene		0.2	ND	ND	ND
Methyl Ethyl Ketone		2	ND	ND	ND
Methyl Isobutyl Ketone		3	ND	ND	ND
Naphthalene		0.4	ND	ND	0.5
n-Propylbenzene		0.2	ND	ND	ND
Styrene		0.1	ND	ND	ND
1,2,3-Trichlorobenzene		0.2	ND	ND	ND
1,2,4-Trichlorobenzene		0.2	ND	ND	ND
1,2,4-Trimethylbenzene		0.1	ND	ND	ND
1,3,5-Trimethylbenzene		0.2	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane		2	ND	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)		0.2	ND	ND	ND
Surrogate	**SPK CONC**	**ACP%**	**%RC**	**%RC**	**%RC**
Pentafluorobenzene	25	70-130	103	103	98
Toluene-D_8	25	88-120	107	105	106
4-Bromofluorobenzene	25	86-115	103	102	104

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
SPK CONC = Spike Concentration; ACP% = Acceptable Range of Percent; %RC = % Recovery
* Date Analyzed using purge and trap technology (EPA Method 5030)
TR Trace Level

Approved By: Eydie Schwartz Date: 4/25/95

WB352PDF/080294
L952055.XLS - w8260w (2) 7/5/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

	Sample Name:	TB	Method Blank
	Lab Code:	L952055-006	L952055-MB
	*Date Analyzed:	4/19/95	4/19/95
	Dilution Factor:	1	1
Analyte	**MDL**		
Bromobenzene	0.2	ND	ND
Bromochloromethane	0.4	ND	ND
Bromodichloromethane	0.2	ND	ND
Bromoform	0.2	ND	ND
Bromomethane	0.3	ND	ND
Carbon Disulfide	1	ND	ND
Carbon tetrachloride	0.3	ND	ND
Chloroethane	0.5	ND	ND
Chloroform	0.3	ND	ND
Chloromethane	0.5	ND	1.7
Dibromochloromethane	0.2	ND	ND
Dibromomethane	0.2	ND	ND
Dichloromethane (Methylene Chloride)	2	ND	ND
Dichlorodifluoromethane	0.3	ND	ND
1,1-Dichloroethane (1,1-DCA)	0.4	ND	ND
1,2-Dichloroethane (1,2-DCA)	0.3	ND	ND
1,1-Dichloroethylene (1,1-DCE)	0.3	ND	ND
trans-1,2-Dichloroethylene	0.4	ND	ND
cis-1,2-Dichloroethylene	0.2	ND	ND
1,2-Dichloropropane	0.3	ND	ND
cis-1,3-Dichloropropylene	0.2	ND	ND
trans-1,3-Dichloropropylene	0.2	ND	ND
1,1,1,2-Tetrachloroethane	0.2	ND	ND
1,1,2,2-Tetrachloroethane	0.2	ND	ND
Tetrachloroethylene(PCE)	0.4	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	0.3	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	0.2	ND	ND
Trichloroethylene (TCE)	0.4	ND	ND
1,2,3-Trichloropropane	0.3	ND	ND
Trichlorofluoromethane	0.3	ND	ND
Vinyl Chloride (VC)	0.4	ND	ND
Benzene	0.3	ND	ND
Chlorobenzene	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
1,3-Dichlorobenzene	0.6	ND	ND
1,4-Dichlorobenzene	0.2	ND	ND

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
* Date Analyzed using purge and trap technology (EPA Method 5030)

Approved By: Eydie Schwartz Date: 4/25/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005 01
Sample Matrix: Water

Service Request: L952055
Date Collected: 4/14/95
Date Received: 4/17/95
Date Extracted: NA

Volatile Organic Compounds
EPA Method 8260
Units: µg/L (ppb)

		Sample Name:	**TB**	**Method Blank**
		Lab Code:	L952055-006	L952055-MB
		*Date Analyzed:	4/19/95	4/19/95
		Dilution Factor:	1	1
Analyte		**MDL**		
Ethyl benzene		0.5	ND	ND
Toluene		0.4	ND	ND
Total Xylenes		0.6	ND	ND
Acetone		10	ND	ND
n-Butylbenzene		0.1	ND	ND
sec-Butylbenzene		0.2	ND	ND
tert-Butylbenzene		0.2	ND	ND
2-Chloroethylvinyl ether		0.3	ND	ND
2-Chlorotoluene		0.2	ND	ND
4-Chlorotoluene		0.2	ND	ND
1,3-Dichloropropane		0.3	ND	ND
2,2-Dichloropropane		0.3	ND	ND
1,1-Dichloropropylene		0.3	ND	ND
Ethylene dibromide (EDB)		0.3	ND	ND
Hexachlorobutadiene		0.4	ND	ND
Isopropylbenzene		0.1	ND	ND
p-Isopropyltoluene		0.2	ND	ND
Methyl Ethyl Ketone		2	ND	ND
Methyl Isobutyl Ketone		3	ND	ND
Naphthalene		0.4	ND	ND
n-Propylbenzene		0.2	ND	ND
Styrene		0.1	ND	ND
1,2,3-Trichlorobenzene		0.2	ND	ND
1,2,4-Trichlorobenzene		0.2	ND	ND
1,2,4-Trimethylbenzene		0.1	ND	ND
1,3,5-Trimethylbenzene		0.2	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane		2	ND	ND
1,2-Dibromo-3-chloropropane (DBCP)		0.2	ND	ND
Surrogate	**SPK CONC**	**ACP%**	**%RC**	**%RC**
Pentafluorobenzene	25	70-130	97	98
Toluene-D_8	25	88-120	106	103
4-Bromofluorobenzene	25	86-115	104	105

NA Not Applicable
MDL Method Detection Limit
ND None Detected at or above detection limit
SPK CONC = Spike Concentration; ACP% = Acceptable Range of Percent; %RC = % Recovery
* Date Analyzed using purge and trap technology (EPA Method 5030)
TR Trace Level

Approved By: Eydie Schwartz Date: 4/25/95

WB3S2PDF/080294
L952055.XLS - wb8260w (3) 7/5/95

6875 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818.587.5550 ■ FAX 818.587.5555

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

Service Request: L952055

Reporting Units: µg/L (ppb)

	*DATE ANALYZED		4/17/95	4/17/95	4/17/95	4/17/95
	DILUTION FACTOR		1	1	1	1
	LAB SAMPLE I.D.		L952055-MB	L952055-MB	L952055-001	L952055-002
	CLIENT SAMPLE I.D.		Method Blank	Method Blank	MW-1	MW-2
PETROLEUM HYDROCARBONS	**MDL**					
Gasoline (EPA 8015M)	40		ND	ND	ND	ND
Surrogate	**Spk Conc**	**ACP%**	**% RC**	**% RC**	**% RC**	**% RC**
a,a,a-Trifluorotoluene	50	60-140	92	89	87	91

*Date Analyzed = Date Extracted using Purge and Trap Technology (EPA Method 5030)
MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
Spk Conc = Spike Concentration; ACP % = Acceptable Range of Percent; % RC = % Recovery

Approved By: Eydie Schwartz Date: 4/25/95

WBPHG/062794

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587 5550 ■ FAX 818 587 5555

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON **Service Request:** L952055
Project: Dial Corp-South Gate/#H93-005 01
Sample Matrix: Water

Reporting Units: µg/L (ppb)

	*DATE ANALYZED		4/17/95	4/17/95	4/17/95	
	DILUTION FACTOR		1	1	1	
	LAB SAMPLE I.D.		L952055-003	L952055-004	L952055-005	
	CLIENT SAMPLE I.D.		MW-6A	MW-6B	MW-7	
PETROLEUM HYDROCARBONS	**MDL**					
Gasoline (EPA 8015M)	40		58	59	260	
Surrogate	**Spk Conc**	**ACP%**	**% RC**	**% RC**	**% RC**	
a,a,a-Trifluorotoluene	50	60-140	100	94	121	

*Date Analyzed = Date Extracted using Purge and Trap Technology (EPA Method 5030)
Spk Conc = Spike Concentration; ACP % = Acceptable Range of Percent; % RC = % Recovery
MDL = Method Detection Limit;

Approved By: Cydie Schwartz Date: 4/25/95
WBPHG/062794

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON **Service Request:** L952055
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

III. Calibration Standard - EPA Method 8260

Most Recent Initial Calibration Date: 1/30/95
Daily Calibration Date: 4/19/95
Supply Source: AccuStandard

Analyte	Initial RF_{ave}	% RSD	Daily RF	% Diff w/RF_{ave}
Bromobenzene	0.507	11	0.544	7
Bromochloromethane	0.362	7	0.369	2
Bromodichloromethane	0.712	9	0.677	5
Bromoform	0.496	13	0.433	13
Bromomethane	0.387	4	0.293	24
Carbon tetrachloride	1.009	7	0.866	14
Chloroethane	0.225	7	0.218	3
Chloroform	1.181	4	1.126	5
Chloromethane	0.598	8	0.492	18
Dibromochloromethane	0.520	10	0.528	2
Dibromomethane	0.378	8	0.406	7
Dichloromethane (Methylene chloride)	0.620	10	0.556	10
Dichlorodifluoromethane	0.649	10	0.596	8
1,1-Dichloroethane (1,1-DCA)	1.215	7	1.109	9
1,2-Dichloroethane (1,2-DCA)	0.812	8	0.851	5
1,1-Dichloroethylene (1,1-DCE)	0.442	3	0.450	2
cis-1,2-Dichloroethylene	0.532	5	0.479	10
trans-1,2-Dichloroethylene	0.702	4	0.659	6
1,2-Dichloropropane	0.427	7	0.407	5
cis-1,3-Dichloropropylene	0.652	9	0.606	7
trans-1,3-Dichloropropylene	0.611	9	0.563	8
1,1,1,2-Tetrachloroethane	0.405	10	0.408	1
1,1,2,2-Tetrachloroethane	0.473	9	0.561	19
Tetrachloroethylene(PCE)	0.485	13	0.484	<1
1,1,1-Trichloroethane (1,1,1-TCA)	1.006	4	0.947	6

Initial RFave = Average Response Factor From Initial Calibration
%RSD = Percent Relative Standard Deviation
Daily RF = Response Factor From Daily Calibration
%Diff w/RFave = Percent Difference with Average Response Factor

Approved By: Eydie Schwartz Date: 4/25/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON **Service Request:** L952055
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

III. Calibration Standard - EPA Method 8260 (Continued)

Most Recent Initial Calibration Date: 1/30/95
Daily Calibration Date: 4/19/95
Supply Source: AccuStandard

Analyte	Initial RF_{ave}	% RSD	Daily RF	% Diff w/RF_{ave}
1,1,2-Trichloroethane (1,1,2-TCA)	0.302	11	0.309	2
Trichloroethylene (TCE)	0.365	6	0.360	1
1,2,3-Trichloropropane	0.466	6	0.555	19
Trichlorofluoromethane	0.952	8	0.921	3
Vinyl chloride (VC)	0.304	7	0.273	10
Benzene	0.930	6	1.090	17
Chlorobenzene	0.960	11	1.023	7
1,2-Dichlorobenzene	0.790	11	0.911	15
1,3-Dichlorobenzene	0.815	7	0.899	10
1,4-Dichlorobenzene	0.802	9	0.929	16
Ethyl benzene	1.426	8	1.566	10
Toluene	0.742	8	0.754	2
m,p-Xylenes	0.518	8	0.576	11
o-Xylene	0.479	7	0.470	2
Acetone	0.199	5	0.180	10
n-Butylbenzene	1.383	12	1.436	4
sec-Butylbenzene	1.772	13	1.885	6
tert-Butylbenzene	1.169	11	1.239	6
2-Chloroethylvinyl ether	0.277	16	0.227	18
2-Chlorotoluene	1.253	7	1.305	4
4-Chlorotoluene	1.257	9	1.336	6
1,3-Dichloropropane	0.585	11	0.621	6
2,2-Dichloropropane	0.985	6	0.938	5
1,1-Dichloropropylene	0.804	5	0.771	4
Ethylene dibromide (EDB)	0.553	11	0.588	6

Initial RFave = Average Response Factor From Initial Calibration
%RSD = Percent Relative Standard Deviation
Daily RF = Response Factor From Daily Calibration
%Diff w/RFave = Percent Difference with Average Response Factor

Approved By: Eydie Schwartz Date: 4/25/95

6835 ENCINO AVENUE ■ ENCINO PARK, CA 91303 ■ 818.587.5550 ■ FAX 818.587.5555

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON **Service Request:** L952055
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

III. Calibration Standard - EPA Method 8260 (Continued)

Most Recent Initial Calibration Date: 1/30/95
Daily Calibration Date: 4/19/95
Supply Source: AccuStandard

Analyte	Initial RF_{ave}	% RSD	Daily RF	% Diff w/RF_{ave}
Hexachlorobutadiene	0.429	10	0.498	16
Isopropylbenzene	1.512	11	1.594	5
p-Isopropyltoluene	1.169	11	1.239	6
Methyl Ethyl Ketone	0.178	4	0.217	22
Methyl Isobutyl Ketone	0.364	5	0.454	25
Naphthalene	1.177	4	1.469	25
n-Propylbenzene	1.860	11	1.944	5
Styrene	0.991	8	1.020	3
1,2,3-Trichlorobenzene	0.801	8	0.773	3
1,2,4-Trichlorobenzene	0.644	3	0.811	26
1,2,4-Trimethylbenzene	1.661	5	1.407	15
1,3,5-Trimethylbenzene	1.237	4	1.343	9
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.416	8	0.317	24
1,2-Dibromo-3-chloropropane	0.147	11	0.172	17

Initial RFave = Average Response Factor From Initial Calibration
%RSD = Percent Relative Standard Deviation
Daily RF = Response Factor From Daily Calibration
%Diff w/RFave = Percent Difference with Average Response Factor

Approved By: Eydie Schwartz Date: 4/25/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON **Service Request No.:** L952055
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Date Performed: 4/18/95
Batch No.: J041795
Lab Code: L952048-002

Analyte	Reporting Units	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP % MS	ACP RPD
TPH as Gasoline	µg/L (ppb)	1000	760	76	950	95	22	70-140	25

II. Laboratory Quality Control Check Sample

Date Performed: 4/17/95
Batch No.: J041795
Lab Code: L952055-LCS

Analyte	Reporting Units	SPK CONC	Result	% Recovery	ACP %
TPH as Gasoline	µg/L (ppb)	1000	970	97	80-120

III. Calibration Standards

Analyte	INITIAL RF_{ave} Date: 10/31/94	% RSD ≤ 20%	DAILY RF Date: 4/17/95	% DIFF W/RF_{ave} ≤ ± 15%
TPH as Gasoline	1.074×10^{-3}	8	1.100×10^{-3}	2

SPK CONC = Spiking Concentration;
% MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
INITIAL RF_{ave} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
% RSD = Percent Relative Standard Deviation; % DIFF = Percent Difference

Approved By: Eydie Schwartz Date: 4/25/95

WBPHQC/062794
L952055 XLS - WBBTEXQC 7/5/95

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587 5550 ■ FAX 818 587 5555

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON **Service Request No.:** L952055
Project: Dial Corp-South Gate/#H93-005.01
Sample Matrix: Water

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Date Performed: 4/18/95
Batch No.: J041795
Lab Code: L952048-002

Analyte	Reporting Units	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP % MS	ACP RPD
TPH as Gasoline	µg/L (ppb)	1000	760	76	950	95	22	70-140	25

II. Laboratory Quality Control Check Sample

Date Performed: 4/17/95
Batch No.: J041795
Lab Code: L952055-LCS

Analyte	Reporting Units	SPK CONC	Result	% Recovery	ACP %
TPH as Gasoline	µg/L (ppb)	1000	970	97	80-120

III. Calibration Standards

Analyte	INITIAL RF_{ave} Date: 10/31/94	% RSD ≤ 20%	DAILY RF Date: 4/17/95	% DIFF W/RF_{ave} ≤ ± 15%
TPH as Gasoline	1.074×10^{-3}	8	1.057×10^{-3}	2

SPK CONC = Spiking Concentration;
% MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
INITIAL RF_{ave} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
% RSD = Percent Relative Standard Deviation; % DIFF = Percent Difference

Approved By: Eydie Schwartz Date: 4/25/95

GOLDEN STATE/CAS LABORATORIES, INC.

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303
818 587-5550 ■ FAX #818 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

CAS SERVICE REQUEST #: GS/CAS L952055 DATE _____ PAGE 1 OF 1

COMPANY/ADDRESS: EMCON
3366 N San Fernando Blvd
Burbank, CA 91506 PHONE (818) 841-1160
PROJECT NAME/LOCATON: Dial Corp/South Gate
/ PROJECT # 1493-005.01
PROJECT MNGR. Mike Flack
SAMPLERS SIGNATURE _____

L952055

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH 8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base/Neutral Acid Organic GC/ms 625/8270	CAM Metals 6010/7000	REMARKS
MW-1	4/14/95	14:35	L952055-1	H2O	5	X					X			QA/QC
MW-2	4/14/95	15:00	-2		5	X					X			RWQCB WIP
MW-6A	4/14/95	14:00	-3		5	X					X			Program Site
MW-6B	4/14/95	14:10	-4		5	X					X			
MW-7	4/14/95	14:29	-5		5	X					X			
TB	4/14/95	--	-6	H2O	2						X			Call Mike
Pump Blank	4/14/95	10:00	-7	H2O	5						X			Flack on
														4/17/95 for
														analysis on
														TB & pump
														Blank / 8260
														for Mike Flack
														4-17-95 for both.

RELINQUISHED BY:	RECEIVED BY:	TURNAROUND REQUIREMENTS:	REPORT REQUIREMENTS:	INVOICE INFORMATION:	SAMPLE RECEIPT:
Signature: Jesus Caras	Signature: [illegible]	___ 24 hr ___ 48 hr ___ 5 day	___ I. Routine Report	P.O. # _____	Shipping VIA: _____
Firm: EMCON	Firm: GS/CAS	X Standard	___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)	Bill to: _____	Shipping #: _____
Date/Time: 4-16-95 11:10 AM	Date/Time: 4-16-95 11:10 AM	___ Other (Specify)	___ III. Data Validation Report (includes All Raw Data)		Condition: _____
		___ Provide Verbal Preliminary Results	___ RWQCB		Accepted for Analysis by: _____
		Requested Report Date _____			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature: Wendy Hampston	Signature:	Signature:
Firm:	Firm: GS/CAS	Firm:	Firm:
Date/Time:	Date/Time: 4-17-95 1200	Date/Time:	Date/Time:

SPECIAL INSTRUCTIONS/COMMENTS:

* Detection Limits for 8015M = 0.5 mg/L
8260 = 0.5-2 µg/L

For more information see attached.

WELL GAUGING FORM

EMCON

PROJECT NO. H93-005-01 SAMPLER JESUS C. DATE 4-14-95

SITE NAME DIAL LOCATION SOUTH GATE

WELL ID	TOTAL DEPTH (FEET)	DEPTH TO PRODUCT (FEET)	DEPTH TO WATER (FEET)	FREE PRODUCT THICKNESS (FEET)	COMMENTS
MW-3			47.04		
MW-7			46.48		
MW-6			46.33		
MW-1			46.08		
MW-2			45.50		
MW-9			13-48		
MW-8			47.54		
MW-10			47.92		
MW-4			45.88		
MW-5			49.52		

GROUNDWATER MONITORING DATA SHEET

EMCON

PROJECT NO. H93-005.01 SAMPLER MLM WELL ID MW-1
SITE NAME TAL LOCATION SOUTH GATE

WELL GAUGING INFORMATION

Date Gauged	Total Depth of Well (feet)	Depth to Water (feet)	Calculated Purge Vol. (gallons)	Actual Purge Vol. (gallons)
4/14/95	64.7	46.08	48	48

CASING DIAMETER: 2"____ 4" X 4½"____ 6"____ OTHER____
FLOATING PRODUCT? YES____ NO____ COLOR____ THICKNESS____ ODOR____

PURGE WATER MONITORING

DATE PURGED 4/14/95 START (2400Hr) 1155 END (2400Hr)____

Time	Cumulative. Purge Vol. (gallons)	Temp. (°F)	E.C. (µS/cm)	pH	Color	Turbidity	Other
1158	15	74.7	5.21	7.53	CLOUDY/GREY	LT	
1203	30	75.2	5.06	7.14	CLEAR	TRACE	
1216	48	73.6	5.02	7.00	"	"	

PURGE METHOD

X Submersible Pump ____Vacuum Truck ____Bladder Pump
____Dedicated Pump ____Bailer (PVC, Teflon, SS) Other (specify)____

SAMPLE METHOD

X Bailer (Teflon (Dispose.)) ____Bladder Pump ____Dedicated Pump
____Submersible Pump ____Peristaltic Pump Other (specify):____

WELL BOX TYPE / INTEGRITY EMCO / GOOD
COMMENTS CAN DRY AT 1203 - 10 MIN RC -

WATER LEVEL 46.10 AT SAMPLE TIME
SAMPLE TIME 1435

GROUNDWATER MONITORING DATA SHEET

emcon

PROJECT NO. H43-005.01 SAMPLER MLM WELL ID MW-2
SITE NAME VIAL LOCATION B SOUTH GATE

WELL GAUGING INFORMATION

Date Gauged	Total Depth of Well (feet)	Depth to Water (feet)	Calculated Purge Vol. (gallons)	Actual Purge Vol. (gallons)
4/14/95	69.7	46.50	63	63

CASING DIAMETER: 2"____ 4"____ 4½"____ 6"____ OTHER____
FLOATING PRODUCT? YES____ NO____ COLOR____ THICKNESS____ ODOR ✓

PURGE WATER MONITORING

DATE PURGED 4/14/95 START (2400Hr) 1246 END (2400Hr) 1251

Time	Cumulative Purge Vol. (gallons)	Temp. (°F)	E.C. (µS/cm)	pH	Color	Turbidity	Other
1248	20	70.6	5.81	7.19	CLEAR	—	
1249	40	70.8	5.66	6.65	"	—	
1250	63	71.4	5.82	6.82	"	—	

PURGE METHOD

X Submersible Pump ____Vacuum Truck ____Bladder Pump
____Dedicated Pump ____Bailer (PVC, Teflon, SS) Other (specify)____

SAMPLE METHOD

X Bailer (Teflon, Dispose.) ____Bladder Pump ____Dedicated Pump
____Submersible Pump ____Peristaltic Pump Other (specify):____

WELL BOX TYPE / INTEGRITY MORRISON / GOOD
COMMENTS

STRONG ODOR
WATER LEVEL AT SAMPLE TIME 45.40
SAMPLE TIME 1500

GROUNDWATER MONITORING DATA SHEET

EMCON

PROJECT NO. 1193-005.01 SAMPLER MLM WELL ID MW-6
SITE NAME CIAL LOCATION SOUTH GATE

WELL GAUGING INFORMATION

Date Gauged	Total Depth of Well (feet)	Depth to Water (feet)	Calculated Purge Vol. (gallons)	Actual Purge Vol. (gallons)
4/14/95	70	46.33	61	61

CASING DIAMETER: 2"____ 4" X 4½"____ 6"____ OTHER____
FLOATING PRODUCT? YES____ NO____ COLOR____ THICKNESS____ ODOR____

PURGE WATER MONITORING

DATE PURGED 4/14/95 START (2400Hr) 1003 END (2400Hr) 1024

Time	Cumulative Purge Vol. (gallons)	Temp. (°F)	E.C. (µS/cm)	pH	Color	Turbidity	Other
1005	20	66.8	11.24	6.49	CLOUDY	TRACE	
1014	40	69.5	9.64	6.54	CLEAR	—	
1024	60	68.8	8.58	6.54	"	—	

PURGE METHOD

X Submersible Pump ____Vacuum Truck ____Bladder Pump
____Dedicated Pump ____Bailer (PVC, Teflon, SS) Other (specify)____

SAMPLE METHOD

X Bailer (Teflon, Dispose.) ____Bladder Pump ____Dedicated Pump
____Submersible Pump ____Peristaltic Pump Other (specify):____

WELL BOX TYPE / INTEGRITY EMCO / GOOD
COMMENTS
- WATER LEVEL AT SAMPLE TIME 46.46
- SAMPLE TIME 1400 MW
DUP SAMPLE COLLECTED (6A/6B)

GROUNDWATER MONITORING DATA SHEET

EMCON

PROJECT NO. H93-005-01 SAMPLER MLM WELL ID MW-7
SITE NAME DIAL LOCATION SOUTH GATE

WELL GAUGING INFORMATION

Date Gauged	Total Depth of Well (feet)	Depth to Water (feet)	Calculated Purge Vol. (gallons)	Actual Purge Vol. (gallons)
4/14/95	68.5	46.48	57	23

CASING DIAMETER: 2"____ 4" X 4½"____ 6"____ OTHER____
FLOATING PRODUCT? YES____ NO____ COLOR____ THICKNESS____ ODOR____

PURGE WATER MONITORING

DATE PURGED 4/14/95 START (2400Hr) 1101 END (2400Hr) 1119

Time	Cumulative. Purge Vol. (gallons)	Temp. (°F)	E.C. (µS/cm)	pH	Color	Turbidity	Other
1107	20	71.3	1213	6.61	CLOUDY/GREY	LT	
1118	21	72.4	1250	6.60	" / "	TRACE	
1119	23	73.0	1261	6.59	" "	" "	

PURGE METHOD

X Submersible Pump ____Vacuum Truck ____Bladder Pump
____Dedicated Pump ____Bailer (PVC, Teflon, SS) Other (specify)____

SAMPLE METHOD

X Bailer (Teflon (Dispose.)) ____Bladder Pump ____Dedicated Pump
____Submersible Pump ____Peristaltic Pump Other (specify):____

WELL BOX TYPE / INTEGRITY EMCO / GOOD
COMMENTS DAN DRY AT 1107 - 0 MW RL -
WATER LEVEL AT SAMPLE TIME 46.58
SAMPLE TIME 1125

ATTACHMENT 1

GROUNDWATER GAUGING PROCEDURES AND FIELD DATA SHEETS

Prior to collecting a groundwater sample, the depth to water and well depth in the site wells, including those not scheduled for sampling, were measured using an electronic sounder. The measurements were taken from a surveyed reference point and were read to the nearest 0.01 foot. Using a submersible pump, each well was purged a minimum of three casing volumes of water. During pumping, purged water was monitored for temperature, pH, and specific conductance to assess if formation water has entered the well. A minimum of three measurements were collected within the calculated purge volume. For low yield wells where recovery exceeds 2 hours, the well was evacuated to dryness once.

When the above-described parameters were stabilized, the water level in the well was allowed to recover to approximately static conditions. After recovery, representative groundwater samples were collected from each well using a Teflon bailer. These samples were collected and placed into 40 ml VOA containers, supplied by the laboratory, with the appropriate preservative. After collection and placement into the VOA containers, the groundwater samples were labeled and stored in an ice-cooled, insulated container and transported to a California-certified laboratory along with appropriate chain-of-custody documentation. Groundwater produced during well purging was contained in sealed Department of Transportation-approved 55-gallon steel drums. The drums were labeled and retained on site pending consideration of appropriate disposal options.

Equipment that was used to collect or come into contact with the groundwater in each well was thoroughly steam cleaned and was rinsed with deionized water. Cleaning of the equipment occurred before sampling began, between each well, and upon completion of the sampling program. A new bailer cord was used for each well sample and was discarded after the completion of the sampling program.

Groundwater samples were collected and analyzed for the following:

Analyte	Method	Detection Limit
Total petroleum hydrocarbons (TPH)	California DTSC Draft LUFT Method	0.50 mg/l
Volatile Organic Compounds (VOCs)	U.S. EPA Method 8260	0.1 to 10 µg/l

Groundwater samples collected followed chain-of-custody documentation procedures from sample collection to final analysis (Attachment 2). The group of groundwater samples collected were accompanied by completed laboratory analysis request forms that included information as to the date and time sample was collected, sample name, sample identification, and sample type.

The Dial Corp
Consumer Products Group

Dial Tower
Phoenix, AZ 85077
Phone (602) 207-2800

October 10, 1995

Ms. Jenny Au
C.R.W.Q.C.B.
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2136

Dear Ms. Au,

I have a draft copy of your letter concerning the Dial property at 9300 Rayo Avenue, Southgate, CA (your reference file No. 95-066). The draft was passed on to me by Mr. Michael Flack of Emcon Associates, our Environmental Consultant.

I would like to know if you can be more specific in your letter. Particularly with regard to soil contamination. As you will recall from our meeting at your office, Dial has asked for one agency to be responsible for regulatory oversite at this property. We know there are soil issues that Dial intends to address, so we desire a specific statement that the C.R.W.Q.C.B. can give us a "No Further Action" letter for soil work.

We look forward to working with the C.R.W.Q.C.B. and wish to address all the environmental issues related to the demolition and clean-up at this site.

Sincerely,

John Estadt
Director Product Supply

JE/sr

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

July 7, 1995

Mr. Mark Kuncir
Emcon Associates
3300 North San Fernando Boulevard
Burbank, CA 91504

REIMBURSEMENT FOR OVERSIGHT OF CLEANUP AND ABATEMENT ACTIVITIES - FORMER DIAL CORPORATION, 9300-9400 RAYO AVENUE, SOUTH GATE, CA - (FILE NO. 95-066)

Regional Board staff have reviewed the reports regarding the soil and ground water investigation at the subject site. The soils have been impacted by petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons were detected at concentrations up to 13,000 mg/kg in soil samples. The ground water has been impacted by VOCs with maximum concentrations of 1,400 µg/ℓ of trichloroethene and 250 µg/ℓ of benzene.

The pollution at the site, including any off-site migration, needs to be fully characterized and remediated to protect the beneficial uses of ground water, consistent with Board's Water Quality Control Plan. Board staff will be involved in review/approval of work plans and technical reports, site inspections, meetings to discuss findings of reports, management options, final remedial plans.

Porter-Cologne, Section 13304, allows the Regional Board to recover reasonable expenses from the responsible party for overseeing cleanup of unregulated releases adversely affecting the State's Waters. It is our intent to recover such costs for regulatory oversight work conducted in accordance with this letter.

My staff discussed with you the reimbursement obligation under Porter-Cologne. We will provide regulatory oversight which includes, site inspections, review of work plans and remediation activities. It is my understanding that you have agreed to participate in the cost recovery program and reimburse staff oversight costs.

For the Fiscal Year 1995-96, we estimate that we will spend approximately 110 labor hours in the conduct of such oversight. The actual time needed will depend upon the nature and extent of the cleanup and your willingness to accomplish the cleanup in a

timely manner. The State billing rate is approximately $70.00 per hour.

A detailed description of the billing procedure is enclosed. We are requesting your acknowledgment of cost recovery obligations and agreement to reimburse the State of California for staff oversight by signing and returning the agreement on or before **August 9, 1995**.

If you have any questions, please contact Jenny Au at (213) 266-7576 or Jim Ross at (213) 266-7550.

Robert P. Ghirelli

ROBERT P. GHIRELLI, D. Env.
Executive Officer

cc: Mr. Jorge Leon, State Water Resources Control Board,
Office of Chief Counsel

Enclosure

EMCON ASSOCIATES

FAX COVER PAGE

RPG 6/22
~~BAH~~ 6/22
~~RRS~~
JR

DATE: June 22, 1995 PROJECT NO. 0H93-001.06

TO: Robin Shipley - RWQCB FAX NO. 213/266-6856

FROM: Mark Kuncir

Number of Pages: 11 (including cover page)

Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed below. Thank you.

COMMENTS:

Based on our conversation on Wednesday, June 21, I have faxed to you a copy of the oversight request letter for the former Dial facility and a copy of the project summary. I appreciate your help in expediting this matter.

Another potential cost recovery project.

Please check one of the boxes below:

Original will follow by: [ ] Regular mail [ ] Other

Original will not follow: [X]

Any questions regarding transmission please call (818) 841-1160
Fax (818) 846-9280

FAX COVER PAGE

EMCON ASSOCIATES

DATE: June 22, 1995 PROJECT NO. 0H93-001.06

TO: **Roy Sakaida** FAX NO. 213/266-7600

FROM: **Mark Kuncir**

Number of Pages: 11 (including cover page)

Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed below. Thank you.

COMMENTS:

The following includes a copy of the oversight letter forwarded to Mr. Robert Ghirelli of the Los Angeles RWQCB and a summary of project work at the former Dial facility. As stated in the letter, EMCON requests that the RWQCB accept regulatory oversight responsibility for groundwater at the referenced site. Please review these materials and contact Mike Flack at (818) 841-1160 to disuss this issue further.

Please check one of the boxes below:

Original will follow by: ☐ Regular mail ☐ Other

Original will not follow: ☒

Any questions regarding transmission please call (818) 841-1160
Fax (818) 846-9280

3300 North San Fernando Blvd., Burbank, California 91504

EMCON
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

June 22, 1995
Project H93-001.06

Mr. Robert P. Ghirelli, D. Env.
Executive Officer
California Regional Water Quality Control Board-
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Oversight Request: Former Dial Corporation
Facility at 9300 - 9400 Rayo Avenue
South Gate, California
95-066

Dear Mr. Ghirelli:

EMCON, on behalf of the Dial Corporation (Dial), requests that the California Regional Water Quality Control Board - Los Angeles Region (Regional Water Quality Control Board [RWQCB]) accept regulatory oversight responsibility for groundwater beneath the referenced former Dial facility. Specifically, we are requesting the Site Cleanup Unit review this project. Quarterly progress updates describing the semiannual groundwater sampling program have been submitted to the RWQCB and Mr. Novak since July 1993. Mr. Novak has advised that his unit is not responsible for this type of project and has suggested the Site Cleanup Section as the appropriate regulatory authority. EMCON has also previously contacted the City of South Gate, Los Angeles County Fire Department Health/Hazardous Materials Division (LACFD), and County of Los Angeles Department of Public Works, Local Oversight Program, all of which declined to accept oversight responsibility for various portions of the project. The LACFD has referred the project to the California Environmental Protection Agency - Department of Toxic Substances Control (Region 3 - Site Mitigation Branch), and we are currently discussing the project on a voluntary basis with the DTSC for areas at the site other than groundwater.

I have attached a brief project summary which outlines the project history and gives a chronology of reports prepared for the site since December 1991. Complete site assessment reports and remediation action plans can be provided upon your request. Please contact me as soon as possible regarding the financial obligation required to review this file and accept oversight responsibility. Your prompt reply would be greatly appreciated so that we may continue to proceed with this project in a timely manner.

Spoke w/ Mike Flack 6/26/95. He indicated that they have met w/ DTSC in Feb. where DTSC sat them down to explain the PEA process. To date, Dial has not signed up w/ any of these programs. Therefore, we can go ahead and put this site on the LA program.

BB/K:\0H93001.06D-94_:0

Sincerely,

EMCON

Michael E. Flack
Project Manager

Attachments: Project Summary

cc: Jay Sampat, Dial
Sally Bilodeau, EMCON

1 PROJECT SUMMARY

Phase I activities were completed at the site by Phase One Inc. in December 1991 to identify areas of potential environmental concern. Based on the Phase I results, EMCON completed Phase II through IV site assessment activities in April 1993 under Dial Purchase Order No. B200003 to further define areas of potential environmental concern. These areas are described below for the South Parking Lot and Main Lot (see Attached Figure 2). A listing of the Phase II through IV documents prepared by EMCON is also attached. The following is a summary of the assessment program performed to date:

- 56 exploratory soil borings have been completed to depths between 0.5 foot and 76 feet below the ground surface (bgs)
- 10 groundwater monitoring wells have been installed in the South Parking Lot and Main Area
- 10 vapor extraction wells have been installed in the Main Area and South Parking Lot
- Semiannual groundwater sampling has been ongoing since April 1992
- Approximately 300 soil samples have been analyzed for analytes listed below

Soil and groundwater samples were analyzed using appropriate U.S. EPA methods, based on specific manufacturing or waste handling procedures employed by Dial in the vicinity of each sampling location. Soil analyses included the following:

- polychlorinated biphenyls (PCBs) by U.S. EPA Method 8080
- total petroleum hydrocarbons (TPH), modified for fuel characterization by U.S. EPA Method 8015 FC
- halogenated volatile organic compounds (VOCs) by U.S. EPA Method 8010/8240
- aromatic volatile organics (benzene, toluene, xylenes, and ethylbenzene: [BTXE]) by U.S. EPA Method 8020
- pH by U.S. EPA Method 9045
- total chromium by U.S. EPA Method 7190
- chlorides and phosphates by U.S. EPA Method 300.1

- phenolphthalein screen
- metals by U.S. EPA Method 6000/7000 Series
- formaldehyde by Method NCASI 487
- California Waste Extraction Test (WET) for thallium

Groundwater sample analyses included TPH modified for fuel characterization (U.S. EPA Method 8015 FC), VOCs (U.S. EPA Method 8010/8260) and phosphates and chlorides (U.S. EPA Method 300.0)

The site lies within the Central Ground Water Basin (Central Basin) of the Los Angeles Coastal Plain. Recognized aquifers beneath the site within the Central Basin include the Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation. Data published by the Los Angeles County Department of Public Works indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet below the ground surface (bgs). Based on inspection of published data, groundwater at this elevation would be contained within the Exposition Aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data.

1.1 SOUTH PARKING LOT

1.1.1 Soils

Fifteen (15) soil borings were drilled in the vicinity of a former iron pipe and fitting building which was previously located at the site. Soil samples collected from these borings were analyzed for compounds including CCR Title 22 metals, total petroleum hydrocarbon (TPH) and volatile organic compounds (VOCs). As a result, an area of TPH-impacted soil was identified immediately southeast of the former pipe fitting building location (Figure 2).

Following vapor extraction testing using three wells installed in the area of impacted soils Dial requested that EMCON solicit bids for site remediation via excavation and off-site treatment/disposal. EMCON subsequently prepared a remedial action plan (RAP) which was sent to the Los Angeles County Fire Department Health and Hazardous Materials Division (LACFD) which concurred with the proposed remedial activities. The LACFD will also review and provide comments regarding our closure report which will be completed and submitted following excavation activities. Since initial comments to the RAP were received from the LACFD, they have elected not to oversee the project and are referring the matter to the state. At this time the subcontractor is in place and the excavation project is waiting on authorization from Dial to proceed.

1.1.2 Groundwater

Monitoring wells MW-8, MW-9, and MW-10 were installed in the South Parking Lot Area to assess the nature and extent of VOC impacts to shallow groundwater beneath the site.

On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-8 and MW-10 have been excluded from the semiannual monitoring program. On the basis of a suspected upgradient source of VOC-impacts to shallow groundwater. In addition, VOCs were not detected above method reporting limits in soil samples collected from 15 borings drilled on the South Parking Lot. Monitoring well MW-9 was installed in a perched aquifer and has been dry over the recent monitoring periods.

1.2 MAIN LOT

Soil borings were drilled at the Main Lot in three types of localities:

- shallow borings (approximately 3 feet deep) in areas with surface staining
- borings (up to approximately 15 feet deep) adjacent to sumps and clarifiers
- deeper borings (up to approximately 50 feet deep) adjacent to current and former underground storage tank locations

Areas identified with impacted soils include:

- the Former Storage Tank Area (TPH and VOCs)
- the Alkylate Unloading Area (dodecylbenzene)
- the Building 8 Former Fuel Tank (TPH)

1.2.1 Former Storage Tank Area and Old Garage

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993) (Figure 2). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet below the ground surface in this area to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons (TPH) were detected at concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs. VOCs 1,2-dichloroethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in this area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTXE- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. As of December 1993, approximately 12,848 pounds of hydrocarbons had been removed since initiation of vapor extraction on September 1993. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in September to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program will be reinitiated in January, 1994, using a 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage. The system will be operated using a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5.

1.2.2 Alkylate Unloading Sump Area

Impacted soils were detected adjacent to the sump. Based on information provided by Dial the compound present in these soils was thought to be dodecylbenzene, a product used in the manufacture of detergents. The dodecylbenzene-impacted soil has been characterized as nonhazardous according to the California Code of Regulations, Title 22. A risk assessment has been completed to support a no further action plan regarding further assessment/remediation of hydrocarbons at this portion of the site.

1.2.3 Building 8 Former Fuel-Oil Tank

Diesel-impacted soils were detected adjacent to the former fuel-oil tank. Based on the shallow depth EMCON completed a Leaking Underground Fuel Tank (LUFT) Risk Assessment and General Risk Appraisal, according to the California State Water Board LUFT Manual guidelines. Based on this assessment impacted soils could be left inplace and not threaten shallow groundwater.

1.2.4 Groundwater

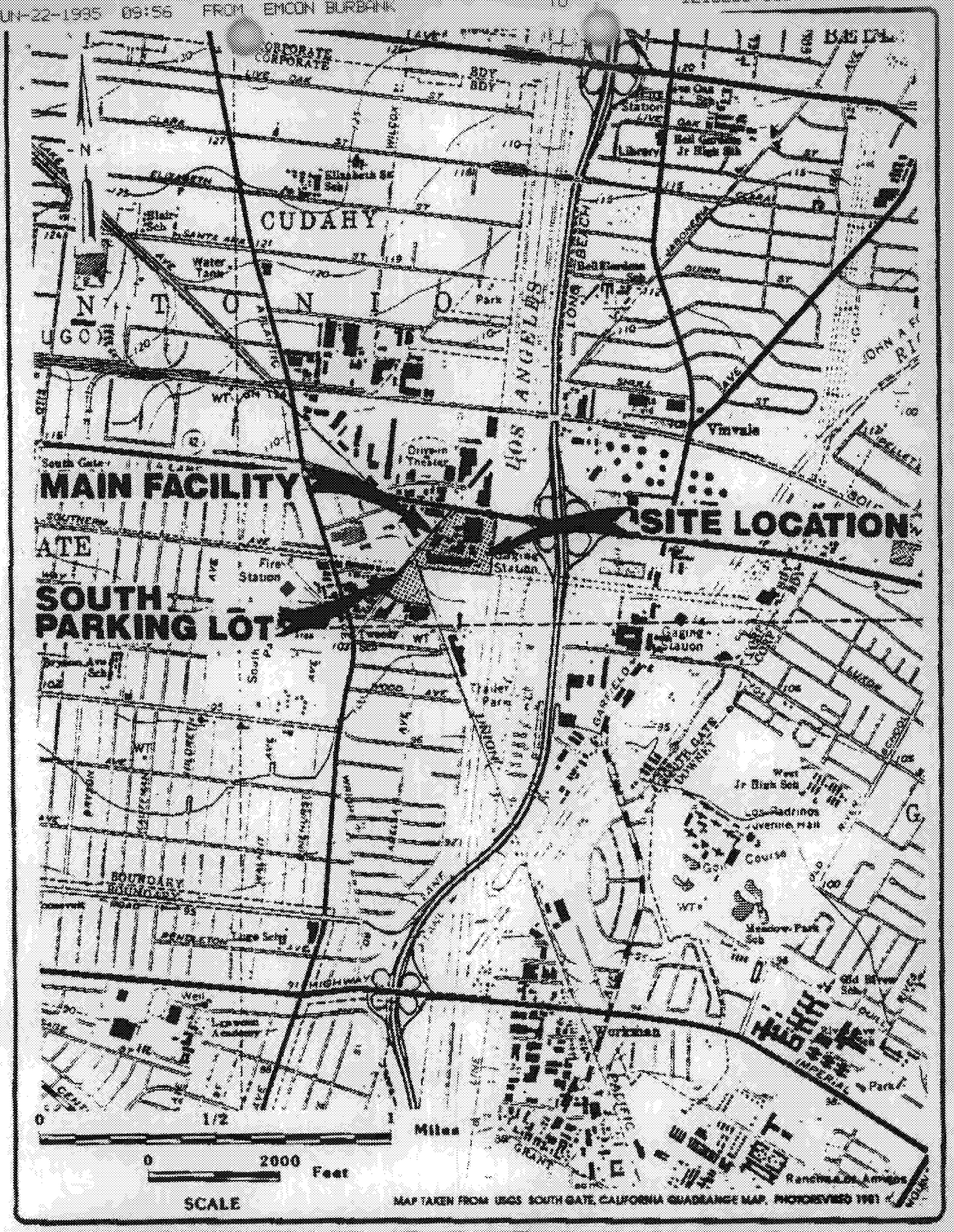
A total of five groundwater monitoring wells (MW-1, MW-2, MW-3, MW-6 and MW-7) were installed on site to characterize groundwater conditions beneath the site. Two additional wells (MW-4 and MW-5) were installed off site and upgradient to characterize groundwater quality entering the site.

Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2).

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 µg/L, respectively. Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 µg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 1). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7. On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 have been excluded from the semiannual monitoring program. Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells.

In the groundwater samples collected from wells MW-2, MW-6, and MW-7, several VOCs were reported slightly above laboratory method reporting limits. Of the VOCs detected in the groundwater samples from these wells none of the concentrations reported were above State Maximum Contaminant Levels for drinking water. Of the previously reported VOCs, 1,1-DCA, 1,2-DCA, TCE, 1,2-DCP and 1,2-DCE, in groundwater samples collected from wells MW-2, MW-6, and MW-7 concentrations were generally lower relative to the April, 1994 sampling event. The VOCs, TCA, 1,2,3-TCP, vinylchloride and acetone were not reported in groundwater samples collected from wells MW-6 and MW-7 in sampling events dating back to April 1992. Acetone is suspected to be a laboratory contaminant at the low concentration (trace) reported in the groundwater sample from well MW-2 and MW-7. The presence of the TCA, TCP, and vinylchloride is anomalous, as they have not been reported in soil samples collected from exploratory soil borings drilled at the site. Because of an apparent encroachment of VOCs in shallow groundwater under the western portion of the Main Facility and below the South Parking Lot an off-site source for TCA, TCP, and vinylchloride in groundwater samples from wells MW-6 and MW-7 maybe possible.

Title	Date
South Lot	
Phase II and III Site Assessment Report, South Lot	7/31/92
Soil-Vapor Extraction Test Report, South Parking Lot	11/17/92
Phase IV Site Assessment Report, South Lot	11/18/92
Competitive Bid Solicitation for Site Remediation Services	12/17/92
Feasibility Study for Hydrocarbon-Impacted Soils, Alkylate Area and South Lot	4/22/93
Request for Proposal (RFP), Soil Remediation at Alkylate Unloading Area and South Lot	4/28/93
Soil and Groundwater Assessment, South Lot	6/25/93
Remedial Action Plan for Hydrocarbon-Impacted Soils, South Lot	9/93
Main Lot	
Phase II and III Site Assessment Report, Main Facility	8/5/92
Phase IV Site Assessment Report	4/9/93
Soil-Vapor Extraction Test Report, Main Facility	7/12/93
Performance and Operational Status, Nov. 93, Vapor Extraction System	11/15/93
Semi-Annual Groundwater Sampling and Analysis	Qtr. Rpts.
Alkylate Unloading Area	
Bioremediation Study	12/11/92
Analysis of Dodecylbenzene-Impacted Soil	7/9/93
Dodecylbenzene Health Risk Assessment	10/12/93



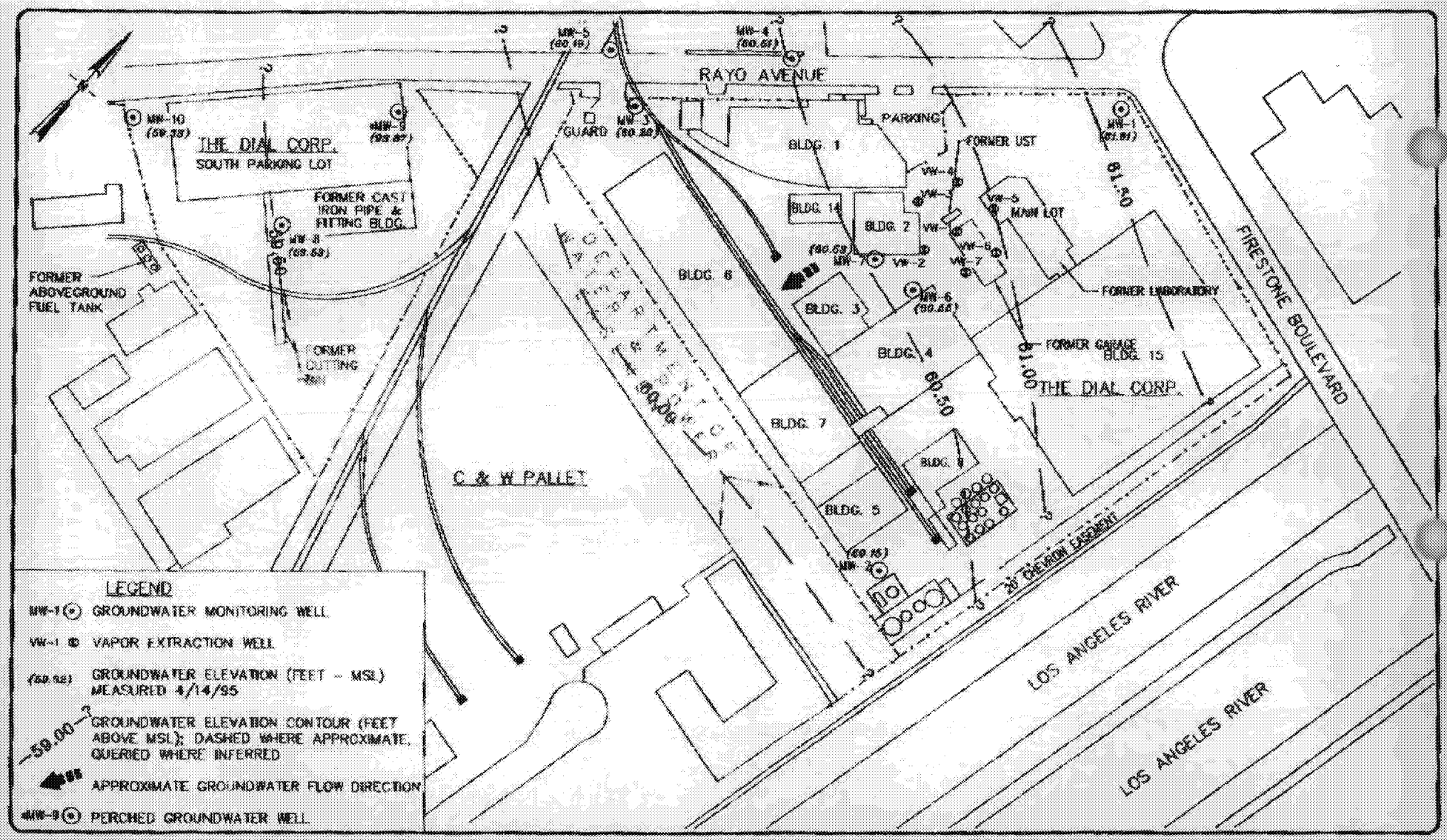
EMCON Associates

THE DIAL CORPORATION
9300 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE LOCATION MAP

FIGURE 1

PROJECT NO. 0183-001.04



EMCON

0 50 100 FEET
SCALE

THE DIAL CORPORATION
9300 & 9400 RAYO AVENUE
MAIN LOT - SOUTH PARKING LOT
SOUTH GATE, CALIFORNIA

GROUNDWATER CONTOUR MAP, APRIL, 1995

FIGURE 2
PROJECT NO. 0H93-001.05

EMCON Associates
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

February 16, 1995
Project 0H93-001.05

Mr. Jim Ross
Section Chief - Site Cleanup Unit
California Regional Water Quality Control Board -
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Progress Report - Fourth Quarter 1994
The Dial Corporation Main Facility
9300 Rayo Avenue
South Gate, California

Dear Mr. Ross:

In anticipation of selling the property, the Dial Corporation (Dial) has been evaluating the referenced Main Facility at 9300 Rayo Avenue in South Gate, California (see Figure 1). This letter is intended to provide notification to the California Regional Water Quality Control Board (RWQCB) of impacted groundwater beneath the Main Facility, discuss remedial activities performed to date, and present the results of a self-imposed semiannual groundwater sampling and quarterly gauging program. The letter was prepared to fulfill the reporting requirements regarding unauthorized release reporting contained in 23 CCR, Chapter 16, Section 2652(d).

BACKGROUND

The Main Facility was formerly used for soap and bleach manufacturing originally by the Purex Corporation, then later by Dial. The facility was operational from the 1920s until December 1991. Site assessment and remedial activities have been undertaken by EMCON Associates (EMCON) on behalf of Dial, in a effort to prepare the property for sale. Dial initiated a Phase I Assessment to identify areas of concern where past activities could have impacted subsurface soil (Phase One, November 1991). Three subsequent phases of assessment (EMCON, August 5, 1992; April 9, 1993) have been initiated to assess the extent of petroleum hydrocarbon and halogenated volatile organic compound (VOC)-impacted soil and groundwater beneath the site.

The site lies within the Central Ground Water Basin (Central Basin) of the Los Angeles Coastal Plain. Recognized aquifers beneath the site within the Central Basin include the

Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation (DWR, April, 1988). Data published by the Los Angeles County Department of Public Works (LACDPW, 1990) indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet below the ground surface (bgs). Based on inspection of published data, groundwater at this elevation would be contained within the Exposition aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data (DWR, 1961).

Groundwater Assessment

To date, a total of seven groundwater monitoring wells (MW-1 through MW-7) have been installed at or nearby the Main Facility and three wells have been installed in the south parking lot area (Figure 2). Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2). Wells MW-8, MW-9, and MW-10 were installed in the south parking lot to assess groundwater conditions beneath the site and a suspected upgradient source of VOCs. Well completion details for these monitoring wells are presented in Table 2.

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 µg/L, respectively (Table 1). Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 µg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 1). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7 (EMCON November 16, 1993).

On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 and MW-8, MW-9, and MW-10 have been excluded from the semiannual monitoring program (Table 1). Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells. Wells MW-8 and MW-10 also show a similar pattern with groundwater samples collected from these wells reportedly containing VOCs. In addition, VOCs were not detected above method

reporting limits in soil samples collected from 15 borings drilled on the south parking lot. Monitoring well MW-9 was installed in a perched aquifer and has been dry over the recent monitoring period. Thus, the above-mentioned wells have been excluded from the semiannual groundwater sampling program on the basis of a suspected off-site source of VOC impacts in these areas.

Soil Vapor Extraction

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993) (Figure 2). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet below the ground surface in this area to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons (TPH) were detected at concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs. VOCs 1,2-dichloroethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in this area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTXE- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. As of December 1993, approximately 12,848 pounds of hydrocarbons had been removed since initiation of vapor extraction on September 1993. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in September to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program will be reinitiated in January, 1995, using a 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage (Figure 2). The system will be operated using a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5. The results of the system performance monitoring will be tabulated and presented on a quarterly basis to the RWQCB.

SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

Groundwater samples were collected and selected wells were gauged on September 28 and 29, 1994. The results of this semiannual sampling effort are described in the third quarter 1994 progress report. The groundwater gauging and sampling procedures and analytical methodologies and field data sheets are presented in Attachment 1.

Groundwater levels were measured on December 19, 1994 in monitoring wells MW-1 through MW-9 at depths ranging from 46.28 to 50.31 feet below the top of the well casing (Table 1). This depth range is less than the estimated depth to regionally extensive groundwater beneath the site (95 feet) cited by the Los Angeles County Department of Public Works (LACDPW, April 1990). This suggests that water beneath the site is contained in a perched or semiperched aquifer above the Exposition Aquifer. Groundwater flow beneath the site is in a southerly direction at a gradient of approximately 0.003 ft/ft (see Figure 2). In general, groundwater levels have risen approximately 5 feet beneath the site since monitoring began in April 1992. The gradient and groundwater flow detection have also remained constant since initiation of the groundwater sampling program.

Dial is aware that the RWQCB and other regulatory agencies are pursuing investigations of impacted groundwater in the site vicinity. In order to cooperate with these efforts, Dial is pleased to provide the locations of the monitoring wells and results of the groundwater analyses. Semiannual groundwater sampling is scheduled for the First and Third Quarters of 1995.

If you have any questions please feel free to call me at (818) 841-1160.

Sincerely,

EMCON

REGISTERED GEOLOGIST
MICHAEL E. FLACK
No. 5473
Exp. 4/95
STATE OF CALIFORNIA

Michael E. Flack, R.G. # 5473
Project Manager

Attachments: References
Table 1 - Summary of Groundwater Analytical Results
Table 2 - Well Completion Details
Figure 1 - Site Location Map
Figure 2 - Groundwater Contour Map, December 1994
Attachment 1 - Groundwater Gauging Procedures and Field Data Sheets

cc: Ms. Hoda Hassan - Los Angeles County Department of Public Works
Mr. Jay Sampat - The Dial Corporation

REFERENCES

DWR, April 1988, Planned Utilization of Groundwater Resources of The Central Plain of Los Angeles County - Bulletin 104 Groundwater Hydrogeology: Department of Water Resources, Sacramento, California.

EMCON, August 5, 1992, Phase II and III Subsurface Assessment Report - Main Facility: The Dial Corporation, 9300 Rayo Avenue, South Gate, California: EMCON Associates, Burbank, California.

EMCON, April 9, 1993, Phase IV Site Assessment Report, The Dial Corporation, Main Facility, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, July 6, 1993, Notification of Impacted Groundwater, The Dial Corporation, Main Facility at 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, November 16, 1993, Semi-Annual Groundwater Sampling and Analysis, The Dial Corporation, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

LACDPW, April 1990; Hydrologic Report 1988-89, Los Angeles Department of Public Works.

Phase One, November, 1991, Phase I Environmental Assessment for the Dial Corporation: Phase One Incorporated.

TABLES

TABLE 1
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-1	20-Apr-92	51.45	56.24	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(107 69)	11-Sep-92	52.00	55.69	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	50 90	56.79	Water level only								
	30-Sep-93	49.95	57.74	<0 05	<0 5	<0 5	<0 5	<0 5	<0 5	<0.5	<0 5	<0 5
	06-Apr-94	48.39	59.30	<0.5	<0.3	<0.4	<0 5	<0.6	<0.4	<0 3	<0.4	<0.3
	29-Sep-94	47.22	60.47	<0.04	<0.3	**1**	<0 5	**0.8**	<0.4	<0 3	<0.4	<0.3
	19-Dec-94	46.87	60.82	Water level only								
MW-2	20-Apr-92	52.73	52.92	<1 0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(105.65)	11-Sep-92	52.60	53.05	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	51.17	54.48	Water level only								
	30-Sep-93	49.84	55.81	<0 05	**4**	**0.5**	<0 5	**0.8**	<0 5	<0.5	<0 5	<0.5
	06-Apr-94	47.74	57.91	<0.5	**2.5**	<0.4	<0.5	<0.6	<0 4	<0.3	<0.4	<0 3
	29-Sep-94 (6)	46.73	58.92	<0.04	**2**	**4**	**0.5**	**4**	**0.4 tr**	<0.3	<0 4	<0.3
	19-Dec-94	46.28	59.37	Water level only								
MW-3	20-Apr-92	53.80	53.44	NA	NA	NA	NA	NA	<0.5	<0.5	**26**	<0.5
(107 24)	19-Mar-93	53.83	53.41	Water level only								
	19-Mar-93	52 30	54.94	Water level only								
	30-Sep-93	51.06	56.18	Water level only								
	05-Apr-94	49.15	58 09	Water level only								
	28-Sep-94	48.23	59.01	Water level only								
	19-Dec-94	47.81	59.43	Water level only								
MW-4	20-Apr-92	52.40	53 99	NA	NA	NA	NA	NA	<0.5	**0.6**	**28**	<0 5
(106.39)	05-Jun-92	52.59	53.80	Water level only								
	19-Mar-93	51.23	55.16	Water level only								
	30-Sep-93	49.96	56.43	Water level only								
	05-Apr-94	47.95	58.44	Water level only								
	28-Sep-94	47.00	59.39	Water level only								
	19-Dec-94	46 67	59.72	Water level only								
MW-5	20-Apr-92	56.00	53.71	NA	NA	NA	NA	NA	<5*	<5*	**1,400**	<5*
(109.71)	05-Jun-92	56.21	53.50	Water level only								
	19-Mar-93	54.95	54.76	Water level only								
	30-Sep-93	53.62	56.09	Water level only								
	05-Apr-94	51.68	58.03	Water level only								
	28-Sep-94	50.73	58.98	Water level only								
	19-Dec-94	50.31	59.40	Water level only								

TABLE 1
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-6[6]	11-Sep-92	53.07	53.81	<0.5	5.8	<5	<5	<5	<5	<5	<5	<5
(106.88)	19-Mar-93	51.80	55.08	Water level only								
	30-Sep-93	50.47	56.41	0.1	48	2	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	48.54	58.34	<0.5	53	1.6	0.5	0.7	0.7	0.7	<0.4	<0.3
	29-Sep-94	47.49	59.39	0.25	54	5	0.8	2	0.8	<0.3	0.4 tr	<0.3
	19-Dec-94	47.06	59.82	Water level only								
MW-7	11-Sep-92	53.17	53.84	<0.5	10	5.9	<5	<5	<5	<5	<5	<5
(107.01)	19-Mar-93	52.11	54.90	Water level only								
	30-Sep-93	50.86	56.15	0.3	120	3	2	3	1.3	0.6	0.6	2.0
	06-Apr-94 (4)	48.70	58.31	0.6	230	5	4.8	3.7	2.7	1.1	1.8	1.8
	29-Sep-94 (7)	47.71	59.30	0.61	250	9	5	6	3	<0.3	<0.4	<0.3
	19-Dec-94	47.33	59.68	Water level only								
MW-8	19-Mar-93 (5)	52.97	54.10	NA	<0.5	<0.5	<0.5	<1	<0.5	0.9	200	<0.5
(107.07)	05-Apr-94	49.76	57.31	Water level only								
	28-Sep-94	48.83	58.24	Water level only								
	19-Dec-94	48.38	58.69	Water level only								
MW-9	19-Mar-93	10.23	97.12	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
(107.35)	05-Apr-94	dry	- -	Water level only								
	28-Sep-94	dry	- -	Water level only								
	19-Dec-94	dry	- -	Water level only								
MW-10	19-Mar-93	53.26	53.75	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	11	<0.5
(107.25)	05-Apr-94	- -	- -	Water level could not be measured - no site access								
	28-Sep-94	- -	- -	Water level could not be measured - no site access								
	19-Dec-94	- -	- -	Water level could not be measured - no site access								
State Maximum Contaminant Levels for Drinking Water					1	100	680	1,750	5	0.5	5	5

TABLE 1
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Notes:

Samples analzed by Golden State/CAS Laboratories Inc., Canoga Park, California.
NA = Not analyzed.
* = Method reporting limit elevated because the sample required diluting.
tr = Trace Level
MSL = Mean Sea Level
(1) Analyzed by U.S. EPA Method 8015 (modified).
(2) Analyzed by U.S. EPA Method 8020.
(3) Analyzed by U.S. EPA Methods 8010 / 8240 / 8260.
(4) Other VOCs by EPA Method 8260 detected were cis-1,2-Dichloroethene (1.0 µg/L) and Chloroform (2.3 µg/L).
(5) Other VOCs by EPA Method 8260 detected were trans-1,2-Dichloroethene (4 µg/L) and cis-1,2-Dichloroethene (89 µg/L).
(6) Other VOCs by EPA Method 8260 detected were Acetone (5 µg/L tr) and 1,1,1-Trichloroethane (0.7 µg/L).
(7) Other VOCs by EPA Method 8260 detected were Chloroform (0.7 µg/l), 1,1,-Dichloroethylene (0.4 µg/L tr), cis-1,2-Dichloroethylene (2 µg/L), 1,2,3-Trichloropropane (2 µg/L), Vinyl Chloride (0.5 µg/L), Acetone (3 µg/L) and Isopropylbenzene (0.4 µg/L tr).

Certified analytical report included as an attachment.

QA/QC: _____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-1	MW-2	MW-3	MW-4	MW-5
Date Installed	4/3/92	4/2/92	4/3/92	6/4/92	6/4/92
Well Permit	129589	129589	129589	verbal *	verbal *
Casing Material		Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Well Box Style	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton
A. Boring Diameter (inches)	10	10	10	10	10
B. Casing Diameter (inches)	4	4	4	4	4
C. Total Depth of Boring (feet)	65.5	70.5	72.0	76.0	75.0
D. Total Depth of Well (feet)	64.7	69.7	71.0	76.0	70.1
E. Top of Casing Elevation (feet)	107.69	105.65	107.24	106.39	109.71
F. Top of Well Box Elevation (feet)	108.11	105.92	107.95	106.95	110.14
G. Perforated Interval					
Perforation Size (inches)	0.020	0.020	0.020	0.020	0.020
Perforation Type	machine slot	machine slot	machine slot	machine slot	machine slot
Depth of Bottom (feet)	64.1	69.1	70.5	75.4	69.5
H. Depth of Top (feet)	44.6	49.6	50.9	45.6	40.0
Length (feet)	19.5	19.5	19.6	29.8	29.5
I. Surface Seal					
Material	concrete	concrete	concrete	concrete	concrete
Depth of Bottom (feet)	2.0	2.0	2.0	2.7	1.3
Depth of Top (feet)	0.0	0.0	0.0	0.0	0.0
Thickness (feet)	2.0	2.0	2.0	2.7	1.3
J. Backfill-Seal(s)					
Material	bentonite	bentonite	bentonite	bentonite	bentonite
Depth of Bottom (feet)	42.0	47.0	47.2	44.0	38.0
Depth of Top (feet)	2.0	2.0	2.0	2.7	1.3
Thickness (feet)	40.0	45.0	45.2	41.3	36.7
K. Gravel Pack(s)					
Material	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar
Depth to Bottom (feet)	64.7	69.7	71.0	76.0	70.1
Depth to Top (feet)	42.0	47.0	47.2	44.0	38.0
Thickness (feet)	22.7	22.7	23.8	32.0	32.1
L. Bottom Seal					
Material	native	native	native	- -	native
Depth of Bottom (feet)	65.5	70.5	72.0	- -	75.0
Depth of Top (feet)	64.7	69.7	71.0	- -	70.1
Thickness (feet)	0.8	0.8	1.0	- -	4.9

* vebal approval by Al Bragg, Los Angeles County Dept. of Public Works on 5/29/92

QA/QC:_____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-6		MW-7		MW-8	
Date Installed	8/19/92		8/19/92		8/19/92	
Well Permit	134051*		134051*		237706	
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0		10.0	
B. Casing Diameter (inches)	4.0		4.0		4.0	
C. Total Depth of Boring (feet)	70.0		70.0		76.5	
D. Total Depth of Well (feet)	70.0		68.5		75.0	
E. Top of Casing Elevation (feet)	106.88		107.01		107.07	
F. Top of Well Box Elevation (feet)	107.40		107.43		107.34	
G. Perforated Interval						
Perforation Size (inches)	0.0		0.0		0.0	
Perforation Type	machine slot		machine slot		machine slot	
Depth of Bottom (feet)	69.4		68.1		75.0	
H. Depth of Top (feet)	44.8		43.5		45.0	
Length (feet)	24.6		24.6		30.0	
I. Surface Seal						
Material	concrete		concrete		concrete	
Depth of Bottom (feet)	3.0		1.8		2.0	
Depth of Top (feet)	0.0		0.0		0.0	
Thickness (feet)	3.0		1.8		2.0	
J. Backfill-Seal(s)						
Material	volclay grout	bentonite	volclay grout	bentonite	volclay grout	bentonite
Depth of Bottom (feet)	39.0	42.0	36.0	39.6	41.0	43.0
Depth of Top (feet)	3.0	39.0	3.0	36.0	2.0	41.0
Thickness (feet)	36.0	3.0	33.0	3.6	39.0	2.0
K. Gravel Pack(s)						
Material	2/12 Lonestar		2/12 Lonestar		No. 3 Lonestar	
Depth to Bottom (feet)	70.0		68.7		76.5	
Depth to Top (feet)	42.0		39.6		43.0	
Thickness (feet)	28.0		29.1		33.5	
L. Bottom Seal						
Material	- -		native		--	
Depth of Bottom (feet)	- -		70.0		--	
Depth of Top (feet)	- -		68.7		--	
Thickness (feet)	- -		1.3		--	

* verbal approval by Al Bragg, Los Ang

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-9		MW-10		VW-1
Date Installed	8/19/92		8/19/92		8/17/92
Well Permit	237706		237706		NA
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton
A. Boring Diameter (inches)	10.0		10.0		10.0
B. Casing Diameter (inches)	4.0		4.0		4.0
C. Total Depth of Boring (feet)	41.5		76.5		51.0
D. Total Depth of Well (feet)	25.0		75.0		50.0
E. Top of Casing Elevation (feet)	107.35		107.25		NA
F. Top of Well Box Elevation (feet)	107.67		107.54		NA
G. Perforated Interval					
Perforation Size (inches)	0.0		0.0		0.02
Perforation Type	machine slot		machine slot		machine slot
Depth of Bottom (feet)	25.0		75.0		50.0
H. Depth of Top (feet)	5.0		45.0		5.0
Length (feet)	20.0		30.0		45.0
I. Surface Seal					
Material	concrete		concrete		concrete
Depth of Bottom (feet)	2.5		2.0		2.0
Depth of Top (feet)	0.0		0.0		0.0
Thickness (feet)	2.5		2.0		2.0
J. Backfill-Seal(s)					
Material	--	bentonite	volclay grout	bentonite	bentonite
Depth of Bottom (feet)	--	4.0	41.0	43.0	5.0
Depth of Top (feet)	--	2.5	2.0	41.0	2.0
Thickness (feet)	--	1.5	39.0	2.0	3.0
K. Gravel Pack(s)					
Material	No. 3 Lonestar		No. 3 Lonestar		2/12 Lonestar
Depth to Bottom (feet)	25.0		76.5		51.0
Depth to Top (feet)	4.0		43.0		5.0
Thickness (feet)	21.0		33.5		46.0
L. Bottom Seal					
Material	native		--		native
Depth of Bottom (feet)	41.5		--		51.0
Depth of Top (feet)	25.0		--		50.0
Thickness (feet)	16.5		--		1.0

* vebal approval by Al Bragg, Los An

QA/QC:_____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-2		VW-3	
Date Installed	8/18/92		8/18/92	
Well Permit	NA		NA	
Casing Material	Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0	
B. Casing Diameter (inches)	2.0		2.0	
C. Total Depth of Boring (feet)	51.0		51.0	
D. Total Depth of Well (feet)	50.0		50.0	
E. Top of Casing Elevation (feet)	NA		NA	
F. Top of Well Box Elevation (feet)	NA		NA	
G. Perforated Interval				
Perforation Size (inches)	0.02		0.02	
Perforation Type	machine slot		machine slot	
Depth of Bottom (feet)	35.0	50.0	35.0	50.0
H. Depth of Top (feet)	5.0	40.0	5.0	40.0
Length (feet)	30.0	10.0	30.0	10.0
I. Surface Seal				
Material	concrete		concrete	
Depth of Bottom (feet)	2.0		2.0	
Depth of Top (feet)	0.0		0.0	
Thickness (feet)	2.0		2.0	
J. Backfill-Seal(s)				
Material	bentonite		bentonite	
Depth of Bottom (feet)	5.0	40.0	5.0	40.0
Depth of Top (feet)	2.0	35.0	2.0	35.0
Thickness (feet)	3.0	5.0	3.0	5.0
K. Gravel Pack(s)				
Material	2/12 Lonestar		2/12 Lonestar	
Depth to Bottom (feet)	35.0	51.0	35.0	51.0
Depth to Top (feet)	5.0	40.0	5.0	40.0
Thickness (feet)	30.0	11.0	30.0	11.0
L. Bottom Seal				
Material	native		native	
Depth of Bottom (feet)	51.0		51.0	
Depth of Top (feet)	50.0		50.0	
Thickness (feet)	1.0		1.0	

* vebal approval by Al Bragg, Los An

QA/QC:_____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-4		VW-5		VW-6
Date Installed	8/17/92		8/17/92		8/17/92
Well Permit	NA		NA		NA
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton
A. Boring Diameter (inches)	10.0		10.0		10.0
B. Casing Diameter (inches)	2.0		2.0		4.0
C. Total Depth of Boring (feet)	51.0		51.0		51.0
D. Total Depth of Well (feet)	50.0		50.0		50.0
E. Top of Casing Elevation (feet)	NA		NA		NA
F. Top of Well Box Elevation (feet)	NA		NA		NA
G. Perforated Interval					
Perforation Size (inches)	0.02		0.02		0.02
Perforation Type	machine slot		machine slot		machine slot
Depth of Bottom (feet)	30.0	50.0	35.0	50.0	50.0
H. Depth of Top (feet)	5.0	35.0	5.0	40.0	5.0
Length (feet)	25.0	15.0	30.0	10.0	45.0
I. Surface Seal					
Material	concrete		concrete		concrete
Depth of Bottom (feet)	2.0		2.0		2.0
Depth of Top (feet)	0.0		0.0		0.0
Thickness (feet)	2.0		2.0		2.0
J. Backfill-Seal(s)					
Material	bentonite		bentonite		bentonite
Depth of Bottom (feet)	5.0	35.0	5.0	40.0	5.0
Depth of Top (feet)	2.0	30.0	2.0	35.0	2.0
Thickness (feet)	3.0	5.0	3.0	5.0	3.0
K. Gravel Pack(s)					
Material	2/12 Lonestar		2/12 Lonestar		2/12 Lonestar
Depth to Bottom (feet)	30.0	51.0	35.0	51.0	51.0
Depth to Top (feet)	5.0	35.0	5.0	40.0	5.0
Thickness (feet)	25.0	16.0	30.0	11.0	46.0
L. Bottom Seal					
Material	native		native		native
Depth of Bottom (feet)	51.0		51.0		51.0
Depth of Top (feet)	50.0		50.0		50.0
Thickness (feet)	1.0		1.0		1.0

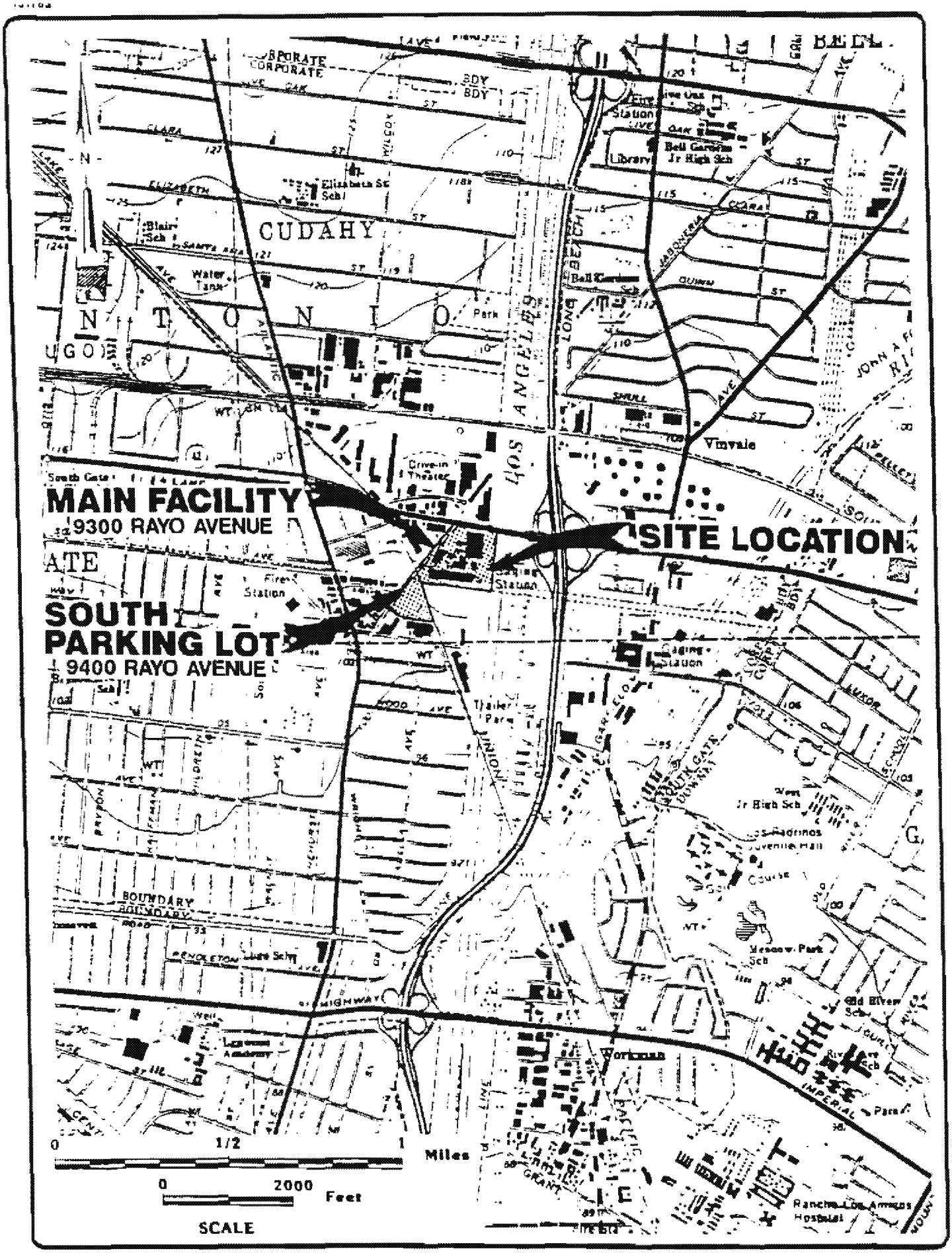
* vebal approval by Al Bragg, Los An

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-7		
Date Installed		8/17/92	
Well Permit		NA	
Casing Material		Sch 40 PVC	
Well Box Style		EMCO-Wheaton	
A. Boring Diameter (inches)		10.0	
B. Casing Diameter (inches)		2.0	
C. Total Depth of Boring (feet)		51.0	
D. Total Depth of Well (feet)		50.0	
E. Top of Casing Elevation (feet)		NA	
F. Top of Well Box Elevation (feet)		NA	
G. Perforated Interval			
Perforation Size (inches)		0.02	
Perforation Type		machine slot	
Depth of Bottom (feet)	15.0	30.0	50.0
H. Depth of Top (feet)	5.0	20.0	35.0
Length (feet)	10.0	10.0	15.0
I. Surface Seal			
Material		concrete	
Depth of Bottom (feet)		2.0	
Depth of Top (feet)		0.0	
Thickness (feet)		2.0	
J. Backfill-Seal(s)			
Material		bentonite	
Depth of Bottom (feet)	5.0	20.0	35.0
Depth of Top (feet)	2.0	15.0	30.0
Thickness (feet)	3.0	5.0	5.0
K. Gravel Pack(s)			
Material		2/12 Lonestar	
Depth to Bottom (feet)	15.0	30.0	51.0
Depth to Top (feet)	5.0	20.0	35.0
Thickness (feet)	10.0	10.0	16.0
L. Bottom Seal			
Material		native	
Depth of Bottom (feet)		51.0	
Depth of Top (feet)		50.0	
Thickness (feet)		1.0	

* vebal approval by Al Bragg, Los An

FIGURES



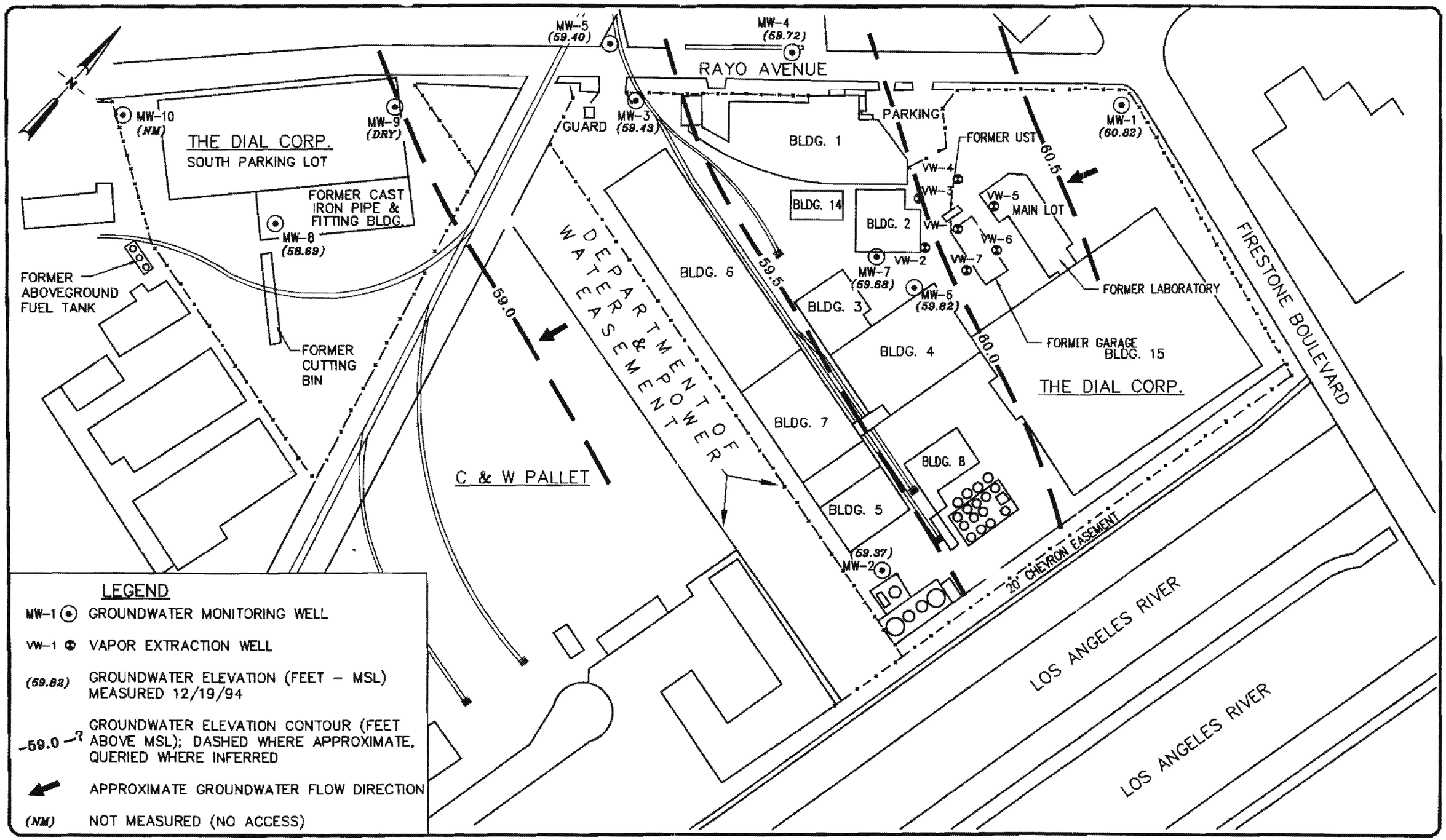
EMCON Associates

THE DIAL CORPORATION
9300 AND 9400 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE LOCATION MAP

FIGURE
1

PROJECT NO.



EMCON

0 50 100 FEET
SCALE

THE DIAL CORPORATION
9300 & 9400 RAYO AVENUE
MAIN LOT – SOUTH PARKING LOT
SOUTH GATE, CALIFORNIA

GROUNDWATER CONTOUR MAP, DECEMBER, 1994

FIGURE
2
PROJECT NO.
0H93-001.05

CADD FILE: 00106-02
DATE LAST REVISED: 02/18/95

ATTACHMENT 1

GROUNDWATER SAMPLING PROCEDURES AND ANALYTICAL METHODOLOGY

ATTACHMENT 1

GROUNDWATER SAMPLING PROCEDURES AND ANALYTICAL METHODOLOGY

Prior to collecting a groundwater sample, the depth to water and well depth in the site wells, including those not scheduled for sampling, were measured using an electronic sounder. The measurements were taken from a surveyed reference point and were read to the nearest 0.01 foot. Using a submersible pump, each well was purged a minimum of three casing volumes of water. During pumping, purged water was monitored for temperature, pH, and specific conductance to assess if formation water has entered the well. A minimum of three measurements were collected within the calculated purge volume. For low yield wells where recovery exceeds 2 hours, the well was evacuated to dryness once.

When the above-described parameters were stabilized, the water level in the well was allowed to recover to approximately static conditions. After recovery, representative groundwater samples were collected from each well using a Teflon bailer. These samples were collected and placed into 40 ml VOA containers, supplied by the laboratory, with the appropriate preservative. After collection and placement into the VOA containers, the groundwater samples were labeled and stored in an ice-cooled, insulated container and transported to a California-certified laboratory along with appropriate chain-of-custody documentation. Groundwater produced during well purging was contained in sealed Department of Transportation-approved 55-gallon steel drums. The drums were labeled and retained on site pending consideration of appropriate disposal options.

Equipment that was used to collect or come into contact with the groundwater in each well was thoroughly steam cleaned and was rinsed with deionized water. Cleaning of the equipment occurred before sampling began, between each well, and upon completion of the sampling program. A new bailer cord was used for each well sample and was discarded after the completion of the sampling program.

Groundwater samples were collected and analyzed for the following:

Analyte	Method	Detection Limit
Total petroleum hydrocarbons (TPH)	California DTSC Draft LUFT Method	0.50 mg/l
Volatile Organic Compounds (VOCs)	U.S. EPA Method 8260	0.1 to 5 µg/l

Groundwater samples collected followed chain-of-custody documentation procedures from sample collection to final analysis (Attachment 2). The group of groundwater samples collected were accompanied by completed laboratory analysis request forms that included information as to the date and time sample was collected, sample name, sample identification, and sample type.

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-1
SAMPLER: J. CASAS CLIENT NAME: DIAL
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 64 CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): 46.87 ACTUAL PURGE VOL (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l) (liquid)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear Heavy (imhoff cones)
ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Cloudy Moderate
Yellow Light
ALKALINITY _____ Brown Trace

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) GOOD
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

DUPLICATE

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: _____ DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: A93-205.01 SAMPLE ID: MW-2
SAMPLER: J. CASAS CLIENT NAME: DIAL
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 69' CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): 46.28 ACTUAL PURGE VOL (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l)	(time)

D.O. (ppm): _____ COLOR COBALT (0 - 100): _____ Clear Cloudy Yellow Brown Heavy Moderate Light Trace (Imhoff cones)
ODOR: _____ TURBIDITY, NTU (0 - 200): _____
ALKALINITY _____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflons)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflons)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) GOOD
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: _____ DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-3
SAMPLER: J CASAS CLIENT NAME: DIAL
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 70' CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): 47.81 ACTUAL PURGE VOL (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l)	(time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear Cloudy Yellow Brown Heavy Moderate Light Trace (Imhoff cones)
ODOR: _____ TURBIDITY, NTU (0 - 200): _____
ALKALINITY _____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.): GOOD
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: _____ DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: 293-005-01 SAMPLE ID: MW-4

SAMPLER: J. CASAS CLIENT NAME: DIAL

DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water ☑ Surface Water ☐ Treatment Effluent ☐ Other: _____

CASING DIAMETER (inches) 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 5 ☐ 6 ☐ Other: _____

DEPTH OF WELL (feet): 75' CALCULATED PURGE (gal.): _____

DEPTH TO WATER (feet): 46.67 ACTUAL PURGE VOL (gal.): _____

STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____

DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l) (time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear Heavy (Imhoff cones)

ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Cloudy Moderate

Yellow Light

ALKALINITY _____ Brown Trace

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

____ Well Wizard™ ____ Dedicated

Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Bailer Stainless Steel ____ Submersible Pump

____ Dipper ____ Dedicated

____ Well Wizard™

Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) Good

FLOATING PRODUCT THICKNESS (FT.): _____ COLOR: _____ LOCK #: 3476

REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: ☐ REVIEWED BY: DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-5

SAMPLER: J. CASAS CLIENT NAME: DIAL

DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____

CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 69.4 CALCULATED PURGE (gal.): _____

DEPTH TO WATER (feet): 50-31 ACTUAL PURGE VOL (gal.): _____

STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____

DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (MS/D)	(Blank)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____

ODOR: _____ TURBIDITY, NTU (0 - 200): _____

ALKALINITY _____

Clear, Cloudy, Yellow, Brown — Heavy, Moderate, Light, Trace — (Imhoff cones)

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

____ Well Wizard™ ____ Dedicated

Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Bailer Stainless Steel ____ Submersible Pump

____ Dipper ____ Dedicated

____ Well Wizard™

Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) GOOD

FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476

REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: _____

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-6
SAMPLER: J CASAS CLIENT NAME: DIAL
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 70' CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): 47.06 ACTUAL PURGE VOL (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l) (time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear Heavy (imhoff cones)
ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Cloudy Moderate
Yellow Light
ALKALINITY _____ Brown Trace

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) Good
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-7
SAMPLER: J. CASAS CLIENT NAME: DJG
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 68' CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): 47.33 ACTUAL PURGE VOL. (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l)	(time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear, Cloudy, Yellow, Brown
ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Heavy, Moderate, Light, Trace
ALKALINITY _____ (Imhoff cones)

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) GOOD
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: _____ DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: 4193-005-01 SAMPLE ID: MW-8

SAMPLER: J. Casas CLIENT NAME: DIAL

DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____

CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 74.5 CALCULATED PURGE (gal.): _____

DEPTH TO WATER (feet): 48.38 ACTUAL PURGE VOL (gal.): _____

STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____

DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (Ml/l)	(time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear Heavy (Imhoff cones)

ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Cloudy Moderate

Yellow Light

ALKALINITY _____ Brown Trace

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

____ Well Wizard™ ____ Dedicated

Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)

____ Bailer Stainless Steel ____ Submersible Pump

____ Dipper ____ Dedicated

____ Well Wizard™

Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) Good

FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476

REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: H93-005-01 SAMPLE ID: MW-9
SAMPLER: J. CASAS CLIENT NAME: DIAL
DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____
CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): 24.5 CALCULATED PURGE (gal.): _____
DEPTH TO WATER (feet): DRY ACTUAL PURGE VOL (gal.): _____
STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____
DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l)	SETTLEABLE SOLIDS (time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____
ODOR: _____ TURBIDITY, NTU (0 - 200): _____
ALKALINITY _____

Clear, Cloudy, Yellow, Brown
Heavy, Moderate, Light, Trace
(Imhoff cones)

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
____ Well Wizard™ ____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon®)
____ Bailer Stainless Steel ____ Submersible Pump
____ Dipper ____ Dedicated
____ Well Wizard™
Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) GOOD
FLOATING PRODUCT THICKNESS (FT.): — COLOR: — LOCK #: 3476
REMARKS: _____

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: DATE

WATER SAMPLE FIELD DATA SHEET

EMCON

PROJECT NO: 493-005-01 SAMPLE ID: MW-10

SAMPLER: J. CASAS CLIENT NAME: DIAL

DATE: 12-19-94 LOCATION: SOUTH GATE

TYPE: Ground Water [X] Surface Water [ ] Treatment Effluent [ ] Other: _____

CASING DIAMETER (inches) 2 [ ] 3 [ ] 4 [X] 4.5 [ ] 5 [ ] 6 [ ] Other: _____

DEPTH OF WELL (feet): _____ CALCULATED PURGE (gal.): _____

DEPTH TO WATER (feet): _____ ACTUAL PURGE VOL (gal.): _____

STANDING WATER IN CASING (feet): _____ X .20 = _____ + DTW _____ = 80% RECHARGE WATER LEVEL

DATE PURGED: _____ START (2400 Hr): _____ END (2400 Hr): _____

DATE SAMPLED: _____ TIME (2400 Hr): _____ WATER LEVEL AT SAMPLE TIME: _____

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): _____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	TEMP. (°F)	E.C. (umhos/cm @25° c)	Ph (units)	COLOR (visual)	TURBIDITY (visual)	SETTLEABLE SOLIDS (ml/l)	(time)

D.O. (ppm): _____ COLOR, COBALT (0 - 100): _____ Clear, Cloudy, Yellow, Brown

ODOR: _____ TURBIDITY, NTU (0 - 200): _____ Heavy, Moderate, Light, Trace

ALKALINITY _____ (imhoff cones)

PURGING EQUIPMENT

- ____ 2" Bladder Pump
- ____ Centrifugal Pump
- ____ Submersible Pump
- ____ Well Wizard™
- ____ Bailer (Teflon®)
- ____ Bailer (PVC)
- ____ Bailer (Stainless Steel)
- ____ Dedicated

Other: _____

SAMPLING EQUIPMENT

- ____ 2" Bladder Pump
- ____ Bailer Stainless Steel
- ____ Dipper
- ____ Well Wizard™
- ____ Bailer (Teflon®)
- ____ Submersible Pump
- ____ Dedicated

Other: _____

WELL CONDITION (cap, cement, padlock, screws, lid etc.) _____

FLOATING PRODUCT THICKNESS (FT.): _____ COLOR: _____ LOCK #: _____

REMARKS: NOT ABLE TO TAKE A READING. SECURY GARD ON SITE DOSENT HAVE A KEY FOR THE GATE.

WATER LEVEL ONLY, NO SAMPLE COLLECTED: [ ] REVIEWED BY: DATE

EMCON Associates
3300 N. San Fernando Boulevard • Burbank, California 91504 • (818) 841-1160 • Fax (818) 846-9280

February 13, 1995
Project H93-001.06

Mr. Robert P. Ghirelli, D. Env.
Executive Officer
California Regional Water Quality Control Board-
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Oversight Request: Former Dial Corporation
Facility at 9300 - 9400 Rayo Avenue
South Gate, California

Dear Mr. Ghirelli:

EMCON, on behalf of the Dial Corporation (Dial), requests that the California Regional Water Quality Control Board - Los Angeles Region (Regional Water Quality Control Board [RWQCB]) accept regulatory oversight responsibility for groundwater beneath the referenced former Dial facility. Specifically, we are requesting the Site Cleanup Unit review this project. Quarterly progress updates describing the semiannual groundwater sampling program have been submitted to the RWQCB and Mr. Novak since July 1993. Mr. Novak has advised that his unit is not responsible for this type of project and has suggested the Site Cleanup Section as the appropriate regulatory authority. EMCON has also previously contacted the City of South Gate, Los Angeles County Fire Department Health/Hazardous Materials Division (LACFD), and County of Los Angeles Department of Public Works, Local Oversight Program, all of which declined to accept oversight responsibility for various portions of the project. The LACFD has referred the project to the California Environmental Protection Agency - Department of Toxic Substances Control (Region 3 - Site Mitigation Branch), and we are currently discussing the project on a voluntary basis with the DTSC for areas at the site other than groundwater.

I have attached the Third and Fourth Quarter, 1994 progress letters and a brief project summary which outlines the project history and gives a chronology of reports prepared for the site since December 1991. Complete site assessment reports and remediation action plans can be provided upon your request. Please contact me as soon as possible regarding the financial obligation required to review this file and accept oversight

responsibility. Your prompt reply would be greatly appreciated so that we may continue to proceed with this project in a timely manner.

Sincerely,

EMCON

Michael E. Flack
Project Manager

Attachments: Progress Reports for the Third and Fourth Quarter, 1994
Project Summary

cc: Jay Sampat, Dial
Sally Bilodeau, EMCON

PROJECT SUMMARY

Phase I activities were completed at the site by Phase One Inc. in December 1991 to identify areas of potential environmental concern. Based on the Phase I results, EMCON completed Phase II through IV site assessment activities in April 1993 under Dial Purchase Order No. B200003 to further define areas of potential environmental concern. These areas are described below for the South Parking Lot and Main Lot (see Attached Figure 2). A listing of the Phase II through IV documents prepared by EMCON is also attached. The following is a summary of the assessment program performed to date:

- 56 exploratory soil borings have been completed to depths between 0.5 foot and 76 feet below the ground surface (bgs)
- 10 groundwater monitoring wells have been installed in the South Parking Lot and Main Area
- 10 vapor extraction wells have been installed in the Main Area and South Parking Lot
- Semiannual groundwater sampling has been ongoing since April 1992
- Approximately 300 soil samples have been analyzed for analytes listed below

Soil and groundwater samples were analyzed using appropriate U.S. EPA methods, based on specific manufacturing or waste handling procedures employed by Dial in the vicinity of each sampling location. Soil analyses included the following:

- polychlorinated biphenyls (PCBs) by U.S. EPA Method 8080
- total petroleum hydrocarbons (TPH), modified for fuel characterization by U.S. EPA Method 8015 FC
- halogenated volatile organic compounds (VOCs) by U.S. EPA Method 8010/8240
- aromatic volatile organics (benzene, toluene, xylenes, and ethylbenzene: [BTXE]) by U.S. EPA Method 8020
- pH by U.S. EPA Method 9045
- total chromium by U.S. EPA Method 7190
- chlorides and phosphates by U.S. EPA Method 300.1

- phenolphthalein screen
- metals by U.S. EPA Method 6000/7000 Series
- formaldehyde by Method NCASI 487
- California Waste Extraction Test (WET) for thallium

Groundwater sample analyses included TPH modified for fuel characterization (U.S. EPA Method 8015 FC), VOCs (U.S. EPA Method 8010/8260) and phosphates and chlorides (U.S. EPA Method 300.0)

The site lies within the Central Ground Water Basin (Central Basin) of the Los Angeles Coastal Plain. Recognized aquifers beneath the site within the Central Basin include the Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation. Data published by the Los Angeles County Department of Public Works indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet below the ground surface (bgs). Based on inspection of published data, groundwater at this elevation would be contained within the Exposition Aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data.

SOUTH PARKING LOT

Soils

Fifteen (15) soil borings were drilled in the vicinity of a former iron pipe and fitting building which was previously located at the site. Soil samples collected from these borings were analyzed for compounds including CCR Title 22 metals, total petroleum hydrocarbon (TPH) and volatile organic compounds (VOCs). As a result, an area of TPH-impacted soil was identified immediately southeast of the former pipe fitting building location (see attached Figure 2a).

Following vapor extraction testing using three wells installed in the area of impacted soils Dial requested that EMCON solicit bids for site remediation via excavation and off-site treatment/disposal. EMCON subsequently prepared a remedial action plan (RAP) which was sent to the Los Angeles County Fire Department Health and Hazardous Materials Division (LACFD) which concurred with the proposed remedial activities. The LACFD will also review and provide comments regarding our closure report which will be completed and submitted following excavation activities. Since initial comments to the RAP were received from the LACFD, they have elected not to oversee the project and are referring the matter to the state. At this time the subcontractor is in place and the excavation project is waiting on authorization from Dial to proceed.

Groundwater

Monitoring wells MW-8, MW-9, and MW-10 were installed in the South Parking Lot Area to assess the nature and extent of VOC impacts to shallow groundwater beneath the site.

On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-8 and MW-10 have been excluded from the semiannual monitoring program. On the basis of a suspected upgradient source of VOC-impacts to shallow groundwater. In addition, VOCs were not detected above method reporting limits in soil samples collected from 15 borings drilled on the South Parking Lot. Monitoring well MW-9 was installed in a perched aquifer and has been dry over the recent monitoring periods.

MAIN LOT

Soil borings were drilled at the Main Lot in three types of localities:

- shallow borings (approximately 3 feet deep) in areas with surface staining
- borings (up to approximately 15 feet deep) adjacent to sumps and clarifiers
- deeper borings (up to approximately 50 feet deep) adjacent to current and former underground storage tank locations

Areas identified with impacted soils include:

- the Former Storage Tank Area (TPH and VOCs)
- the Alkylate Unloading Area (dodecylbenzene)
- the Building 8 Former Fuel Tank (TPH)

Former Storage Tank Area and Old Garage

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993) (Figure 2). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet below the ground surface in this area to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons (TPH) were detected at concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs. VOCs 1,2-dichloroethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in this area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTXE- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. As of December 1993, approximately 12,848 pounds of hydrocarbons had been removed since initiation of vapor extraction on September 1993. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in September to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program will be reinitiated in January, 1994, using a 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage. The system will be operated using a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5.

Alkylate Unloading Sump Area

Impacted soils were detected adjacent to the sump. Based on information provided by Dial the compound present in these soils was thought to be dodecylbenzene, a product used in the manufacture of detergents. The dodecylbenzene-impacted soil has been characterized as nonhazardous according to the California Code of Regulations, Title 22. A risk assessment has been completed to support a no further action plan regarding further assessment/remediation of hydrocarbons at this portion of the site.

Building 8 Former Fuel-Oil Tank

Diesel-impacted soils were detected adjacent to the former fuel-oil tank. Based on the shallow depth EMCON completed a Leaking Underground Fuel Tank (LUFT) Risk Assessment and General Risk Appraisal, according to the California State Water Board LUFT Manual guidelines. Based on this assessment impacted soils could be left inplace and not threaten shallow groundwater.

Groundwater

A total of five groundwater monitoring wells (MW-1, MW-2, MW-3, MW-6 and MW-7) were installed on site to characterize groundwater conditions beneath the site. Two additional wells (MW-4 and MW-5) were installed off site and upgradient to characterize groundwater quality entering the site.

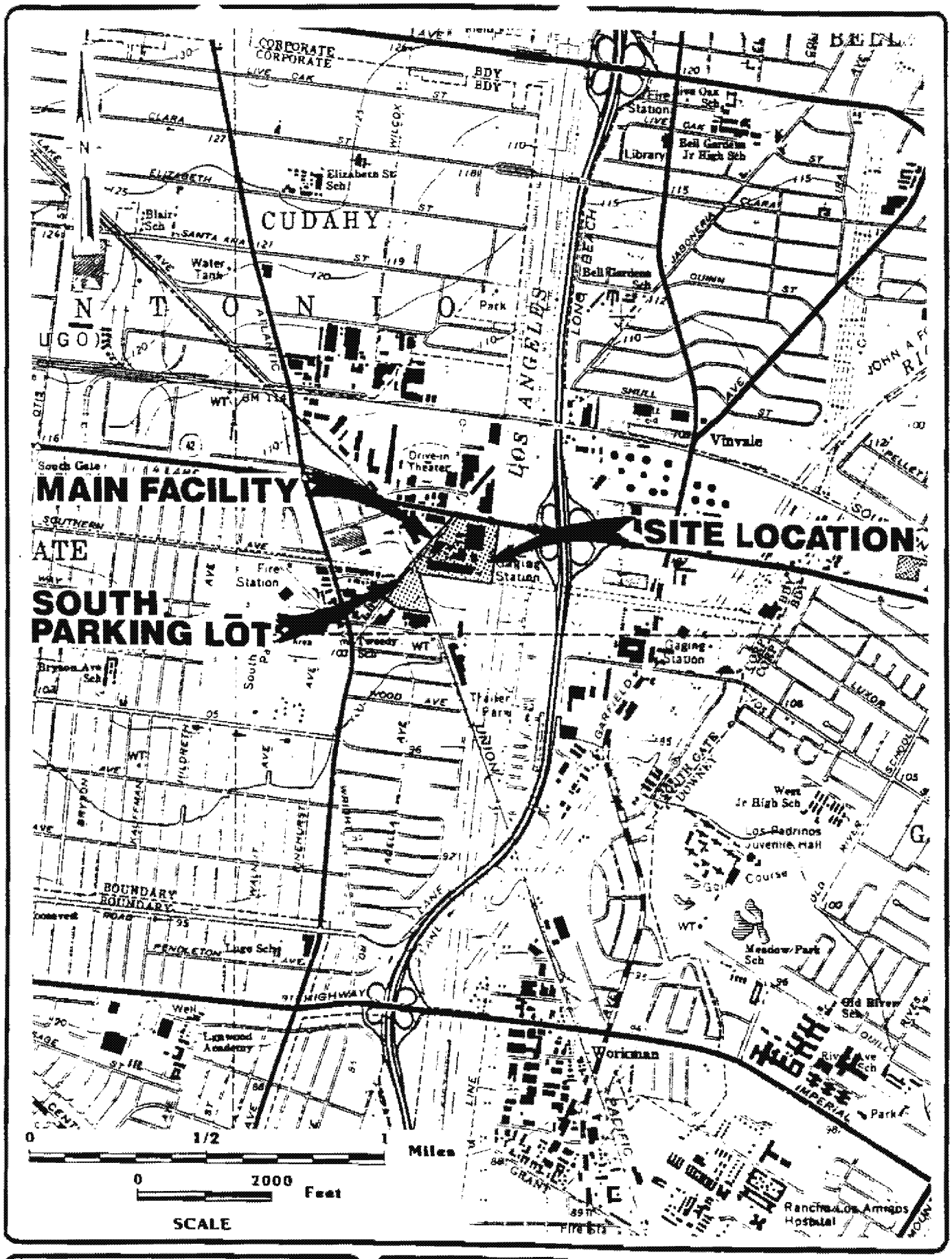
Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2).

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 µg/L, respectively. Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 µg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 1). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7. On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 have been excluded from the semiannual monitoring program. Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells.

In the groundwater samples collected from wells MW-2, MW-6, and MW-7, several VOCs were reported slightly above laboratory method reporting limits. Of the VOCs detected in the groundwater samples from these wells none of the concentrations reported were above State Maximum Contaminant Levels for drinking water. Of the previously reported VOCs, 1,1-DCA, 1,2-DCA, TCE, 1,2-DCP and 1,2-DCE, in groundwater samples collected from wells MW-2, MW-6, and MW-7 concentrations were generally lower relative to the April, 1994 sampling event. The VOCs, TCA, 1,2,3-TCP, vinylchloride and acetone were not reported in groundwater samples collected from wells MW-6 and MW-7 in sampling events dating back to April 1992. Acetone is suspected to be a laboratory contaminant at the low concentration (trace) reported in the groundwater sample from well MW-2 and MW-7. The presence of the TCA, TCP, and vinylchloride is anomalous, as they have not been reported in soil samples collected from exploratory soil borings drilled at the site. Because of an apparent encroachment of VOCs in shallow groundwater under the western portion of the Main Facility and below the South Parking Lot an off-site source for TCA, TCP, and vinylchloride in groundwater samples from wells MW-6 and MW-7 maybe possible.

Title	Date
South Lot	
Phase II and III Site Assessment Report, South Lot	7/31/92
Soil-Vapor Extraction Test Report, South Parking Lot	11/17/92
Phase IV Site Assessment Report, South Lot	11/18/92
Competitive Bid Solicitation for Site Remediation Services	12/17/92
Feasibility Study for Hydrocarbon-Impacted Soils, Alkylate Area and South Lot	4/22/93
Request for Proposal (RFP), Soil Remediation at Alkylate Unloading Area and South Lot	4/28/93
Soil and Groundwater Assessment, South Lot	6/25/93
Remedial Action Plan for Hydrocarbon-Impacted Soils, South Lot	9/93
Main Lot	
Phase II and III Site Assessment Report, Main Facility	8/5/92
Phase IV Site Assessment Report	4/9/93
Soil-Vapor Extraction Test Report, Main Facility	7/12/93
Performance and Operational Status, Nov. 93, Vapor Extraction System	11/15/93
Semi-Annual Groundwater Sampling and Analysis	11/16/93
Alkylate Unloading Area	
Bioremediation Study	12/11/92
Analysis of Dodecylbenzene-Impacted Soil	7/9/93
Dodecylbenzene Health Risk Assessment	10/12/93

131763



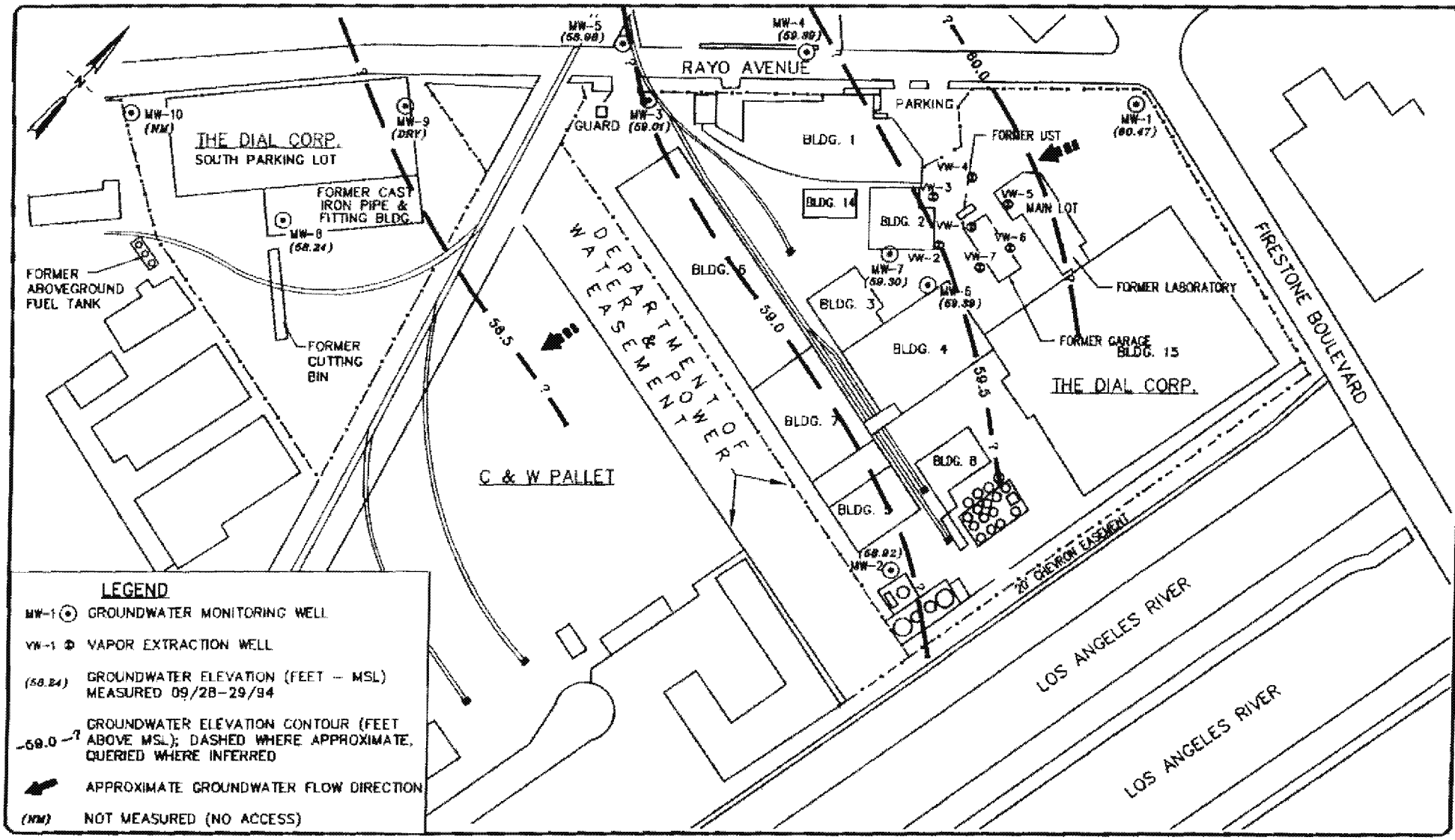
EMCON Associates

THE DIAL CORPORATION
9300 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE LOCATION MAP

FIGURE 1

PROJECT NO. 0H93-001.05



EMCON Associates

0 50 100 FEET
SCALE

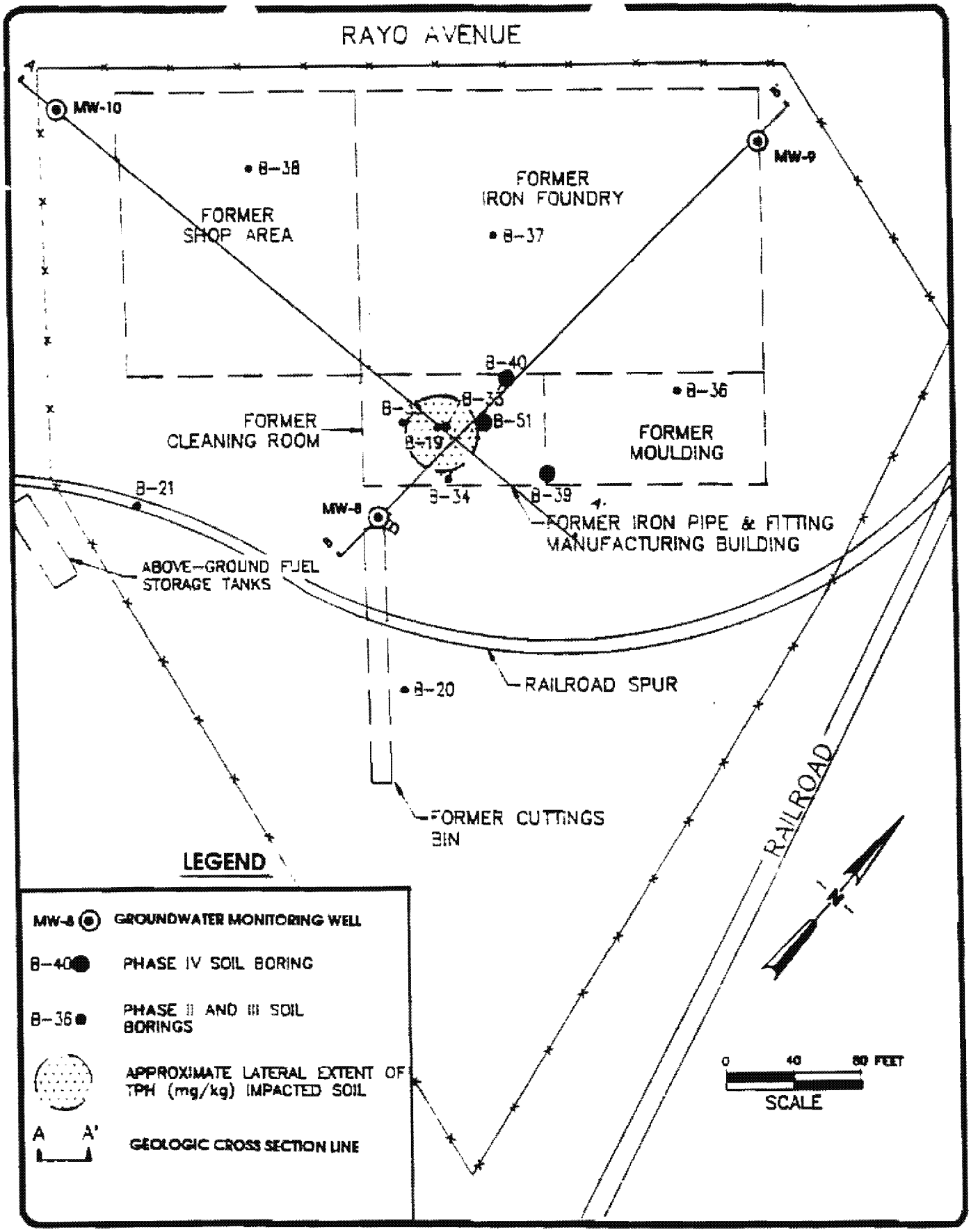
THE DIAL CORPORATION
9300 & 9400 RAYO AVENUE
MAIN LOT – SOUTH PARKING LOT
SOUTH GATE, CALIFORNIA

GROUNDWATER CONTOUR MAP, SEPTEMBER 1994

FIGURE 2

PROJECT NO. 0H93-001.05

CADD FILE: 00105-02
DATE LAST REVISED: 11/17/94



emcon

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
0	11/6/92	BASE MAP				

DATE OF ISSUE 11/6/92 | DWN BY R.BORNTREGER | CHK BY | DES BY | APP BY

THE DIAL CORPORATION
9400 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE PLAN

FIGURE 2a

PROJECT NO. H93-01.03

H930103A.DWG

EMCON Associates
3300 N. San Fernando Boulevard • P.O. Box 7894 • Burbank, California 91510-7894 • (818) 841-1160 • Fax (818) 846-9280

January 20, 1995
Project 0H93-001.05

Mr. Jim Ross
Section Chief
Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Progress Report - Third Quarter 1994
The Dial Corporation Main Facility
9300 Rayo Avenue
South Gate, California

Dear Mr. Ross:

In anticipation of selling the property, the Dial Corporation (Dial) has been evaluating the referenced Main Facility at 9300 Rayo Avenue in South Gate, California (see Figure 1). This letter is intended to provide notification to the California Regional Water Quality Control Board (RWQCB) of impacted groundwater beneath the Main Facility, discuss remedial activities performed to date, and present the results of a self-imposed semiannual groundwater sampling and quarterly gauging program. The letter was prepared to fulfill the reporting requirements regarding unauthorized release reporting contained in 23 CCR, Chapter 16, Section 2652(d).

BACKGROUND

The Main Facility was formerly used for soap and bleach manufacturing originally by the Purex Corporation, then later by Dial. The facility was operational from the 1920s until December 1991. Site assessment and remedial activities have been undertaken by EMCON Associates (EMCON) on behalf of Dial, in a effort to prepare the property for sale. Dial initiated a Phase I Assessment to identify areas of concern where past activities could have impacted subsurface soil (Phase One, November 1991). Three subsequent phases of assessment (EMCON, August 5, 1992; April 9, 1993) have been initiated to assess the extent of petroleum hydrocarbon and halogenated volatile organic compound (VOC)-impacted soil and groundwater beneath the site.

Exposition and Gage Aquifers within the Lakewood formation; and the Jefferson, Lynwood, and Silverado Aquifers within the San Pedro Formation (DWR, April, 1988). Data published by the Los Angeles County Department of Public Works (LACDPW, 1990) indicated groundwater at an elevation of approximately 10 feet above mean sea level in Fall, 1988. Based on an overall site elevation of approximately 105 feet above sea level, the corresponding depth to groundwater would be approximately 95 feet below the ground surface (bgs). Based on inspection of published data, groundwater at this elevation would be contained within the Exposition aquifer. The top of the Exposition Aquifer is estimated to occur at a depth of approximately 85 feet bgs on the basis of published data (DWR, 1961).

Groundwater Assessment

To date, a total of seven groundwater monitoring wells (MW-1 through MW-7) have been installed at or nearby the Main Facility and three wells have been installed in the south parking lot area (Figure 2). Wells MW-1 through MW-3 were installed around the perimeter of the Main Facility. Wells MW-4 and MW-5 were installed off site, hydraulically cross and upgradient from well MW-3 to assess a suspected off-site source of VOCs. Wells MW-6 and MW-7 were installed immediately downgradient from the former underground storage tanks in the area of the old garage at the Main Facility (Figure 2). Wells MW-8, MW-9, and MW-10 were installed in the south parking lot to assess groundwater conditions beneath the site and a suspected upgradient source of VOCs. Well completion details for these monitoring wells are presented in Table 2.

During a previous site assessment conducted in September 1992, groundwater samples collected from wells MW-6 and MW-7 contained benzene concentrations of 5.8 and 10 µg/L, respectively (Table 1). Benzene was not reported in groundwater samples collected in September 1992 from upgradient well MW-1 or downgradient well MW-2. VOCs were not reported (<5 µg/L) in groundwater samples collected from these wells (MW-1, MW-2, MW-6 and MW-7) in September 1992 (Table 1). Beginning in April 1992, Dial initiated semi-annual sampling and monitoring of wells MW-1, MW-2, MW-6, and MW-7 (EMCON November 16, 1993).

On the basis of historical monitoring and sampling data, groundwater monitoring wells MW-3, MW-4, and MW-5 and MW-8, MW-9, and MW-10 have been excluded from the semiannual monitoring program (Table 1). Wells MW-3, MW-4, and MW-5 are cross and upgradient from wells MW-6 and MW-7 and show VOC concentrations above those reported in groundwater samples collected from on-site wells. Wells MW-8 and MW-10 also show a similar pattern with groundwater samples collected from these wells reportedly containing VOCs. In addition, VOCs were not detected above method

reporting limits in soil samples collected from 15 borings drilled on the south parking lot. Monitoring well MW-9 was installed in a perched aquifer and has been dry over the recent monitoring period. Thus, the above-mentioned wells have been excluded from the semiannual groundwater sampling program on the basis of a suspected off-site source of VOC impacts in these areas.

Soil Vapor Extraction

Three phases of site assessment activity have been conducted in the area of the former storage tanks and the old garage (EMCON, August 5, 1992; April 9, 1993) (Figure 2). Thirteen exploratory soil borings (B5, B26-B28, B44-B50, MW6 and MW7) were drilled to depths of approximately 50 to 75 feet below the ground surface in this area to assess the lateral and vertical extent of petroleum hydrocarbons and VOCs. Total petroleum hydrocarbons (TPH) were detected at concentrations up to 13,000 mg/kg in soil samples collected from these borings at depths between 10 and 40 feet bgs. VOCs 1,2-dichloroethane (1,2-DCA) and chloroform were reported at concentrations up to 290 and 360 ug/kg, respectively, in soil samples collected at depths between 10 and 50 feet bgs (EMCON, April 9, 1993). Seven of the 13 exploratory borings drilled in this area were converted to vapor extraction wells (VW-1 through VW-7) and vapor extraction well nests (Figure 2).

Dial has voluntarily initiated remedial action activities to mitigate BTXE- and VOC-impacted soil in the area of the old garage using the network of seven vapor extraction wells. This remediation was performed under a South Coast Air Quality Management District various-locations permit for emissions abatement equipment. As of December 1993, approximately 12,848 pounds of hydrocarbons had been removed since initiation of vapor extraction on September 1993. The influent hydrocarbon concentration to the emissions control equipment dropped from 36,000 parts per million by volume (ppmv) reported in the sample collected in September to 4,200 ppmv reported in the November, 1993 sample. VOCs were not reported above method reporting limits in the influent samples collected during operation of the vapor extraction system.

The vapor extraction program will be reinitiated in January, 1995, using a 250 scfm thermal/catalytic oxidizer and the existing well field around the old garage (Figure 2). The system will be operated using a network of above-ground conveyance piping connected to wells VW-1, VW-2, VW-3, VW-4 and VW-5. The results of the system performance monitoring will be tabulated and presented on a quarterly basis to the RWQCB.

SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

Groundwater samples were collected and selected wells were gauged on September 28 and 29, 1994. The groundwater sampling procedures and analytical methodologies are presented in Attachment 1. Certified analytical laboratory reports and chain-of-custody documentation in addition to field data sheets are presented in Attachment 2.

Groundwater was measured on September 28 and 29, 1994, in monitoring wells MW-1 through MW-8 at depths ranging from 46.73 to 50.73 feet below the top of the well casing (Table 1). This depth range is less than the estimated depth to regionally extensive groundwater beneath the site (95 feet) cited by the Los Angeles County Department of Public Works (LACDPW, April 1990). This suggests that water beneath the site is contained in a perched or semiperched aquifer above the Exposition Aquifer. Groundwater flow beneath the site is in a southerly direction at a gradient of approximately 0.003 ft/ft (see Figure 2). In general, groundwater levels have risen approximately 5 feet beneath the site since monitoring began in April 1992.

Total petroleum hydrocarbon (TPH) concentrations of 0.25 and 0.61 mg/L, respectively, were reported in the groundwater samples collected from wells MW-6 and MW-7 on September 26 and 27, 1994 (Table 1). Benzene, toluene, xylenes, and/or ethylbenzene (BTXE) were detected in groundwater samples collected from wells MW-1, MW-2, MW-6, and MW-7 at concentrations ranging from 0.5 µg/L (ethylbenzene) to 250 µg/L (benzene) (Table 1). Halogenated VOCs including 1,1-dichloroethane (1,1 DCA; 3 µg/L), chloroform (0.7 µg/L), 1,1-dichloroethylene (1,1-DCE; 0.4 µg/L), cis-1,2-dichloroethylene (1.2-DCE; 2 µg/L), 1,2,3-trichloropropane (2 µg/L), vinyl chloride (0.5 µg/L), acetone (3 µg/L), and isopropylbenzene (0.4 µg/L) were reported in the groundwater sample from well MW-7, which is centrally located on the former facility property. The groundwater sample from well MW-6, located approximately 60 feet east of well MW-7 (Figure 2), contained 0.8 µg/L of 1,1-DCA and 0.4 µg/L of trichloroethylene (TCE). The groundwater sample from MW-2, located at the southeast corner of the site, contained 1,1-DCA (0.4 µg/L); 1,1,1-trichloroethane (TCA; 0.7 µg/L); and acetone (5 µg/L). Halogenated VOCs were not reported in the groundwater sample from upgradient well MW-1 (Table 1).

DISCUSSION

Recent (September 1994) groundwater samples collected from wells MW-2, MW-6, and MW-7 on the Dial Main Facility showed no increase in the benzene concentrations relative to concentrations reported in the water samples collected during the previous sampling event in April 1994. Although benzene was not reported above laboratory

method reporting limits (<0.5 µg/L), toluene and ethylbenzene were detected in the groundwater sample from upgradient well MW-1. These aromatic compounds have not been reported in groundwater samples collected from wells MW-1 during previous sampling events.

In the groundwater samples collected from wells MW-2, MW-6, and MW-7, several VOCs were reported slightly above laboratory method reporting limits (Table 1). Of the VOCs detected in the groundwater samples from these wells none of the concentrations reported were above State Maximum Contaminant Levels for drinking water (Table 1). Of the previously reported VOCs, 1,1-DCA, 1,2-DCA, TCE, 1,2-DCP and 1,2-DCE, in groundwater samples collected from wells MW-2, MW-6, and MW-7 concentrations were generally lower relative to the April, 1994 sampling event. The VOCs, TCA, 1,2,3-TCP, vinylchloride and acetone were not reported in groundwater samples collected from wells MW-6 and MW-7 in sampling events dating back to April 1992. Acetone is suspected to be a laboratory contaminant at the low concentration (trace) reported in the groundwater sample from well MW-2 and MW-7. The presence of the TCA, TCP, and vinylchloride is anomalous, as they have not been reported in soil samples collected from exploratory soil borings drilled at the site. Because of an apparent encroachment of VOCs in shallow groundwater under the western portion of the Main Facility and below the South Parking Lot an off-site source for TCA, TCP, and vinylchloride in groundwater samples from wells MW-6 and MW-7 maybe possible.

Dial is aware that the RWQCB and other regulatory agencies are pursuing investigations of impacted groundwater in the site vicinity. In order to cooperate with these efforts, Dial is pleased to provide the locations of the monitoring wells and results of the groundwater analyses.

If you have any questions please feel free to call me at (818) 841-1160.

Sincerely,

EMCON

Michael E. Flack, R.G. # 5473
Project Manager

Attachments: References
Table 1 - Summary of Groundwater Analytical Results
Table 2 - Well Completion Details
Figure 1 - Site Location Map
Figure 2 - Groundwater Contour Map, September 1994
Attachment 1 - Groundwater Sampling Procedures and Analytical Methodology
Attachment 2 - Certified Analytical Laboratory Reports and Chain-of-Custody Documentation

cc: Ms. Hoda Hassan - Los Angeles County Department of Public Works
Mr. Jay Sampat - The Dial Corporation

REFERENCES

DWR, April 1988, Planned Utilization of Groundwater Resources of The Central Plain of Los Angeles County - Bulletin 104 Groundwater Hydrogeology: Department of Water Resources, Sacramento, California.

EMCON, August 5, 1992, Phase II and III Subsurface Assessment Report - Main Facility: The Dial Corporation, 9300 Rayo Avenue, South Gate, California: EMCON Associates, Burbank, California.

EMCON, April 9, 1993, Phase IV Site Assessment Report, The Dial Corporation, Main Facility, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, July 6, 1993, Notification of Impacted Groundwater, The Dial Corporation, Main Facility at 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

EMCON, November 16, 1993, Semi-Annual Groundwater Sampling and Analysis, The Dial Corporation, 9300 Rayo Avenue, South Gate, California. EMCON Associates, Burbank California.

LACDPW, April 1990; Hydrologic Report 1988-89, Los Angeles Department of Public Works.

Phase One, November, 1991, Phase I Environmental Assessment for the Dial Corporation: Phase One Incorporated.

TABLE

TABLE 1
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Ground Water Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-1	20-Apr-92	51.45	56.24	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(107.69)	11-Sep-92	52.00	55.69	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	50.90	56.79	Water level only								
	30-Sep-93	49.95	57.74	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	48.39	59.30	<0.5	<0.3	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
	29-Sep-94	47.22	60.47	<0.04	<0.3	1	<0.5	0.8	<0.4	<0.3	<0.4	<0.3
MW-2	20-Apr-92	52.73	52.92	<1.0	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
(105.65)	11-Sep-92	52.60	53.05	<0.5	<5	<5	<5	<5	<5	<5	<5	<5
	19-Mar-93	51.17	54.48	Water level only								
	30-Sep-93	49.84	55.81	<0.05	4	0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	47.74	57.91	<0.5	2.5	<0.4	<0.5	<0.6	<0.4	<0.3	<0.4	<0.3
	29-Sep-94 (6)	46.73	58.92	<0.04	2	4	0.5	4	0.4 tr	<0.3	<0.4	<0.3
MW-3	20-Apr-92	53.80	53.44	NA	NA	NA	NA	NA	<0.5	<0.5	26	<0.5
(107.24)	19-Mar-93	53.83	53.41	Water level only								
	19-Mar-93	52.30	54.94	Water level only								
	30-Sep-93	51.06	56.18	Water level only								
	05-Apr-94	49.15	58.09	Water level only								
	28-Sep-94	48.23	59.01	Water level only								
MW-4	20-Apr-92	52.40	53.99	NA	NA	NA	NA	NA	<0.5	0.6	28	<0.5
(106.39)	05-Jun-92	52.59	53.80	Water level only								
	19-Mar-93	51.23	55.16	Water level only								
	30-Sep-93	49.96	56.43	Water level only								
	05-Apr-94	47.95	58.44	Water level only								
	28-Sep-94	47.00	59.39	Water level only								
MW-5	20-Apr-92	56.00	53.71	NA	NA	NA	NA	NA	<5*	<5*	1,400	<5*
(109.71)	05-Jun-92	56.21	53.50	Water level only								
	19-Mar-93	54.95	54.76	Water level only								
	30-Sep-93	53.62	56.09	Water level only								
	05-Apr-94	51.68	58.03	Water level only								
	28-Sep-94	50.73	58.98	Water level only								
MW-6*	11-Sep-92	53.07	53.81	<0.5	5.8	<5	<5	<5	<5	<5	<5	<5
(106.88)	19-Mar-93	51.80	55.08	Water level only								
	30-Sep-93	50.47	56.41	0.1	48	2	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
	06-Apr-94	48.54	58.34	<0.5	53	1.6	0.5	0.7	0.7	0.7	<0.4	<0.3
	29-Sep-94	47.49	59.39	0.25	54	5	0.8	2	0.8	<0.3	0.4 tr	<0.3

TABLE 1
Summary of Groundwater Analytical Results

The Dial Corporation
9300 Rayo Avenue, South Gate, California

Well No. and Elevation (ft-MSL)	Date Sampled	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Petroleum Hydrocarbons (1) (mg/L)	Benzene (2) (µg/L)	Toluene (2) (µg/L)	Ethyl-benzene (2) (µg/L)	Xylenes (2) (µg/L)	1,1-Dichloro-ethane (3) (µg/L)	1,2-Dichloro-ethane (3) (µg/L)	Trichloro-ethene (3) (µg/L)	1,2-Dichloro-propane (3) (µg/L)
MW-7	11-Sep-92	53.17	53.84	<0.5	10	5.9	<5	<5	<5	<5	<5	<5
(107.01)	19-Mar-93	52.11	54.90	Water level only								
	30-Sep-93	50.86	56.15	0.3	120	3	2	3	1.3	0.6	0.6	2.0
	06-Apr-94 (4)	48.70	58.31	0.6	230	5	4.8	3.7	2.7	1.1	1.8	1.8
	29-Sep-94 (7)	47.71	59.30	0.61	250	9	5	6	3	<0.3	<0.4	<0.3
MW-8	19-Mar-93 (5)	52.97	54.10	NA	<0.5	<0.5	<0.5	<1	<0.5	0.9	200	<0.5
(107.07)	05-Apr-94	49.76	57.31	Water level only								
	28-Sep-94	48.83	58.24	Water level only								
MW-9	19-Mar-93	10.23	97.12	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
(107.35)	05-Apr-94	dry	- -	Water level only								
	28-Sep-94	dry	- -	Water level only								
MW-10	19-Mar-93	53.26	53.75	NA	<0.5	<0.5	<0.5	<1	<0.5	<0.5	11	<0.5
(107.25)	05-Apr-94	- -	- -	Water level could not be measured - no site access								
	28-Sep-94	- -	- -	Water level could not be measured - no site access								
State Maximum Contaminant Levels for Drinking Water					1	100	680	1,750	5	0.5	5	5

Notes:
Samples analzed by Golden State/CAS Laboratories Inc., Canoga Park, California.
NA = Not analyzed.
* = Method reporting limit elevated because the sample required diluting.
tr = Trace Level
MSL = Mean Sea Level
(1) Analyzed by U.S. EPA Method 8015 (modified).
(2) Analyzed by U.S. EPA Method 8020.
(3) Analyzed by U.S. EPA Methods 8010 / 8240 / 8260.
(4) Other VOCs by EPA Method 8260 detected were cis-1,2-Dichloroethene (1.0 µg/L) and Chloroform (2.3 µg/L)
(5) Other VOCs by EPA Method 8260 detected were trans-1,2-Dichloroethene (4 µg/L) and cis-1,2-Dichloroethene (89 µg/L).
(6) Other VOCs by EPA Method 8260 detected were Acetone (5 µg/L tr) and 1,1,1-Trichloroethane (0.7 µg/L)
(7) Other VOCs by EPA Method 8260 detected were Chloroform (0.7 µg/l), 1,1,-Dichloroethylene (0.4 µg/L tr), cis-1,2-Dichloroethylene (2 µg/L), 1,2,3-Trichloropropane (2 µg/L), Vinyl Chloride (0.5 µg/L), Acetone (3 µg/L) and Isopropylbenzene (0.4 µg/L tr).

Certified analytical report included as an attachment.

QA/QC:_____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-1	MW-2	MW-3	MW-4	MW-5
Date Installed	4/3/92	4/2/92	4/3/92	6/4/92	6/4/92
Well Permit	129589	129589	129589	verbal *	verbal *
Casing Material		Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Well Box Style	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton
A. Boring Diameter (inches)	10	10	10	10	10
B. Casing Diameter (inches)	4	4	4	4	4
C. Total Depth of Boring (feet)	65.5	70.5	72.0	76.0	75.0
D. Total Depth of Well (feet)	64.7	69.7	71.0	76.0	70.1
E. Top of Casing Elevation (feet)	107.69	105.65	107.24	106.39	109.71
F. Top of Well Box Elevation (feet)	108.11	105.92	107.95	106.95	110.14
G. Perforated Interval					
Perforation Size (inches)	0.020	0.020	0.020	0.020	0.020
Perforation Type	machine slot	machine slot	machine slot	machine slot	machine slot
Depth of Bottom (feet)	64.1	69.1	70.5	75.4	69.5
H. Depth of Top (feet)	44.6	49.6	50.9	45.6	40.0
Length (feet)	19.5	19.5	19.6	29.8	29.5
I. Surface Seal					
Material	concrete	concrete	concrete	concrete	concrete
Depth of Bottom (feet)	2.0	2.0	2.0	2.7	1.3
Depth of Top (feet)	0.0	0.0	0.0	0.0	0.0
Thickness (feet)	2.0	2.0	2.0	2.7	1.3
J. Backfill-Seal(s)					
Material	bentonite	bentonite	bentonite	bentonite	bentonite
Depth of Bottom (feet)	42.0	47.0	47.2	44.0	38.0
Depth of Top (feet)	2.0	2.0	2.0	2.7	1.3
Thickness (feet)	40.0	45.0	45.2	41.3	36.7
K. Gravel Pack(s)					
Material	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar	2/12 Lonestar
Depth to Bottom (feet)	64.7	69.7	71.0	76.0	70.1
Depth to Top (feet)	42.0	47.0	47.2	44.0	38.0
Thickness (feet)	22.7	22.7	23.8	32.0	32.1
L. Bottom Seal					
Material	native	native	native	- -	native
Depth of Bottom (feet)	65.5	70.5	72.0	- -	75.0
Depth of Top (feet)	64.7	69.7	71.0	- -	70.1
Thickness (feet)	0.8	0.8	1.0	- -	4.9

* vebal approval by Al Bragg, Los Angeles County Dept. of Public Works on 5/29/92

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Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-6		MW-7		MW-8	
Date Installed	8/19/92		8/19/92		8/19/92	
Well Permit	134051*		134051*		237706	
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0		10.0	
B. Casing Diameter (inches)	4.0		4.0		4.0	
C. Total Depth of Boring (feet)	70.0		70.0		76.5	
D. Total Depth of Well (feet)	70.0		68.5		75.0	
E. Top of Casing Elevation (feet)	106.88		107.01		107.07	
F. Top of Well Box Elevation (feet)	107.40		107.43		107.34	
G. Perforated Interval						
Perforation Size (inches)	0.0		0.0		0.0	
Perforation Type	machine slot		machine slot		machine slot	
Depth of Bottom (feet)	69.4		68.1		75.0	
H. Depth of Top (feet)	44.8		43.5		45.0	
Length (feet)	24.6		24.6		30.0	
I. Surface Seal						
Material	concrete		concrete		concrete	
Depth of Bottom (feet)	3.0		1.8		2.0	
Depth of Top (feet)	0.0		0.0		0.0	
Thickness (feet)	3.0		1.8		2.0	
J. Backfill-Seal(s)						
Material	volclay grout	bentonite	volclay grout	bentonite	volclay grout	bentonite
Depth of Bottom (feet)	39.0	42.0	36.0	39.6	41.0	43.0
Depth of Top (feet)	3.0	39.0	3.0	36.0	2.0	41.0
Thickness (feet)	36.0	3.0	33.0	3.6	39.0	2.0
K. Gravel Pack(s)						
Material	2/12 Lonestar		2/12 Lonestar		No. 3 Lonestar	
Depth to Bottom (feet)	70.0		68.7		76.5	
Depth to Top (feet)	42.0		39.6		43.0	
Thickness (feet)	28.0		29.1		33.5	
L. Bottom Seal						
Material	--		native		--	
Depth of Bottom (feet)	--		70.0		--	
Depth of Top (feet)	--		68.7		--	
Thickness (feet)	--		1.3		--	

* vebal approval by Al Bragg, Los An

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Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	MW-9	MW-10	VW-1
Date Installed	8/19/92	8/19/92	8/17/92
Well Permit	237706	237706	NA
Casing Material	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Well Box Style	EMCO-Wheaton	EMCO-Wheaton	EMCO-Wheaton
A. Boring Diameter (inches)	10.0	10.0	10.0
B. Casing Diameter (inches)	4.0	4.0	4.0
C. Total Depth of Boring (feet)	41.5	76.5	51.0
D. Total Depth of Well (feet)	25.0	75.0	50.0
E. Top of Casing Elevation (feet)	107.35	107.25	NA
F. Top of Well Box Elevation (feet)	107.67	107.54	NA
G. Perforated Interval			
Perforation Size (inches)	0.0	0.0	0.02
Perforation Type	machine slot	machine slot	machine slot
Depth of Bottom (feet)	25.0	75.0	50.0
H. Depth of Top (feet)	5.0	45.0	5.0
Length (feet)	20.0	30.0	45.0
I. Surface Seal			
Material	concrete	concrete	concrete
Depth of Bottom (feet)	2.5	2.0	2.0
Depth of Top (feet)	0.0	0.0	0.0
Thickness (feet)	2.5	2.0	2.0
J. Backfill-Seal(s)			
Material	-- bentonite	volclay grout bentonite	bentonite
Depth of Bottom (feet)	-- 4.0	41.0 43.0	5.0
Depth of Top (feet)	-- 2.5	2.0 41.0	2.0
Thickness (feet)	-- 1.5	39.0 2.0	3.0
K. Gravel Pack(s)			
Material	No. 3 Lonestar	No. 3 Lonestar	2/12 Lonestar
Depth to Bottom (feet)	25.0	76.5	51.0
Depth to Top (feet)	4.0	43.0	5.0
Thickness (feet)	21.0	33.5	46.0
L. Bottom Seal			
Material	native	--	native
Depth of Bottom (feet)	41.5	--	51.0
Depth of Top (feet)	25.0	--	50.0
Thickness (feet)	16.5	--	1.0

* vebal approval by Al Bragg, Los An

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-2		VW-3	
Date Installed	8/18/92		8/18/92	
Well Permit	NA		NA	
Casing Material	Sch 40 PVC		Sch 40 PVC	
Well Box Style	EMCO-Wheaton		EMCO-Wheaton	
A. Boring Diameter (inches)	10.0		10.0	
B. Casing Diameter (inches)	2.0		2.0	
C. Total Depth of Boring (feet)	51.0		51.0	
D. Total Depth of Well (feet)	50.0		50.0	
E. Top of Casing Elevation (feet)	NA		NA	
F. Top of Well Box Elevation (feet)	NA		NA	
G. Perforated Interval				
Perforation Size (inches)	0.02		0.02	
Perforation Type	machine slot		machine slot	
Depth of Bottom (feet)	35.0	50.0	35.0	50.0
H. Depth of Top (feet)	5.0	40.0	5.0	40.0
Length (feet)	30.0	10.0	30.0	10.0
I. Surface Seal				
Material	concrete		concrete	
Depth of Bottom (feet)	2.0		2.0	
Depth of Top (feet)	0.0		0.0	
Thickness (feet)	2.0		2.0	
J. Backfill-Seal(s)				
Material	bentonite		bentonite	
Depth of Bottom (feet)	5.0	40.0	5.0	40.0
Depth of Top (feet)	2.0	35.0	2.0	35.0
Thickness (feet)	3.0	5.0	3.0	5.0
K. Gravel Pack(s)				
Material	2/12 Lonestar		2/12 Lonestar	
Depth to Bottom (feet)	35.0	51.0	35.0	51.0
Depth to Top (feet)	5.0	40.0	5.0	40.0
Thickness (feet)	30.0	11.0	30.0	11.0
L. Bottom Seal				
Material	native		native	
Depth of Bottom (feet)	51.0		51.0	
Depth of Top (feet)	50.0		50.0	
Thickness (feet)	1.0		1.0	

* verbal approval by Al Bragg, Los An

QA/QC:_____

Project H93-001.05

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-4		VW-5		VW-6
Date Installed	8/17/92		8/17/92		8/17/92
Well Permit	NA		NA		NA
Casing Material	Sch 40 PVC		Sch 40 PVC		Sch 40 PVC
Well Box Style	EMCO-Wheaton		EMCO-Wheaton		EMCO-Wheaton
A. Boring Diameter (inches)	10.0		10.0		10.0
B. Casing Diameter (inches)	2.0		2.0		4.0
C. Total Depth of Boring (feet)	51.0		51.0		51.0
D. Total Depth of Well (feet)	50.0		50.0		50.0
E. Top of Casing Elevation (feet)	NA		NA		NA
F. Top of Well Box Elevation (feet)	NA		NA		NA
G. Perforated Interval					
Perforation Size (inches)	0.02		0.02		0.02
Perforation Type	machine slot		machine slot		machine slot
Depth of Bottom (feet)	30.0	50.0	35.0	50.0	50.0
H. Depth of Top (feet)	5.0	35.0	5.0	40.0	5.0
Length (feet)	25.0	15.0	30.0	10.0	45.0
I. Surface Seal					
Material	concrete		concrete		concrete
Depth of Bottom (feet)	2.0		2.0		2.0
Depth of Top (feet)	0.0		0.0		0.0
Thickness (feet)	2.0		2.0		2.0
J. Backfill-Seal(s)					
Material	bentonite		bentonite		bentonite
Depth of Bottom (feet)	5.0	35.0	5.0	40.0	5.0
Depth of Top (feet)	2.0	30.0	2.0	35.0	2.0
Thickness (feet)	3.0	5.0	3.0	5.0	3.0
K. Gravel Pack(s)					
Material	2/12 Lonestar		2/12 Lonestar		2/12 Lonestar
Depth to Bottom (feet)	30.0	51.0	35.0	51.0	51.0
Depth to Top (feet)	5.0	35.0	5.0	40.0	5.0
Thickness (feet)	25.0	16.0	30.0	11.0	46.0
L. Bottom Seal					
Material	native		native		native
Depth of Bottom (feet)	51.0		51.0		51.0
Depth of Top (feet)	50.0		50.0		50.0
Thickness (feet)	1.0		1.0		1.0

* vebal approval by Al Bragg, Los An

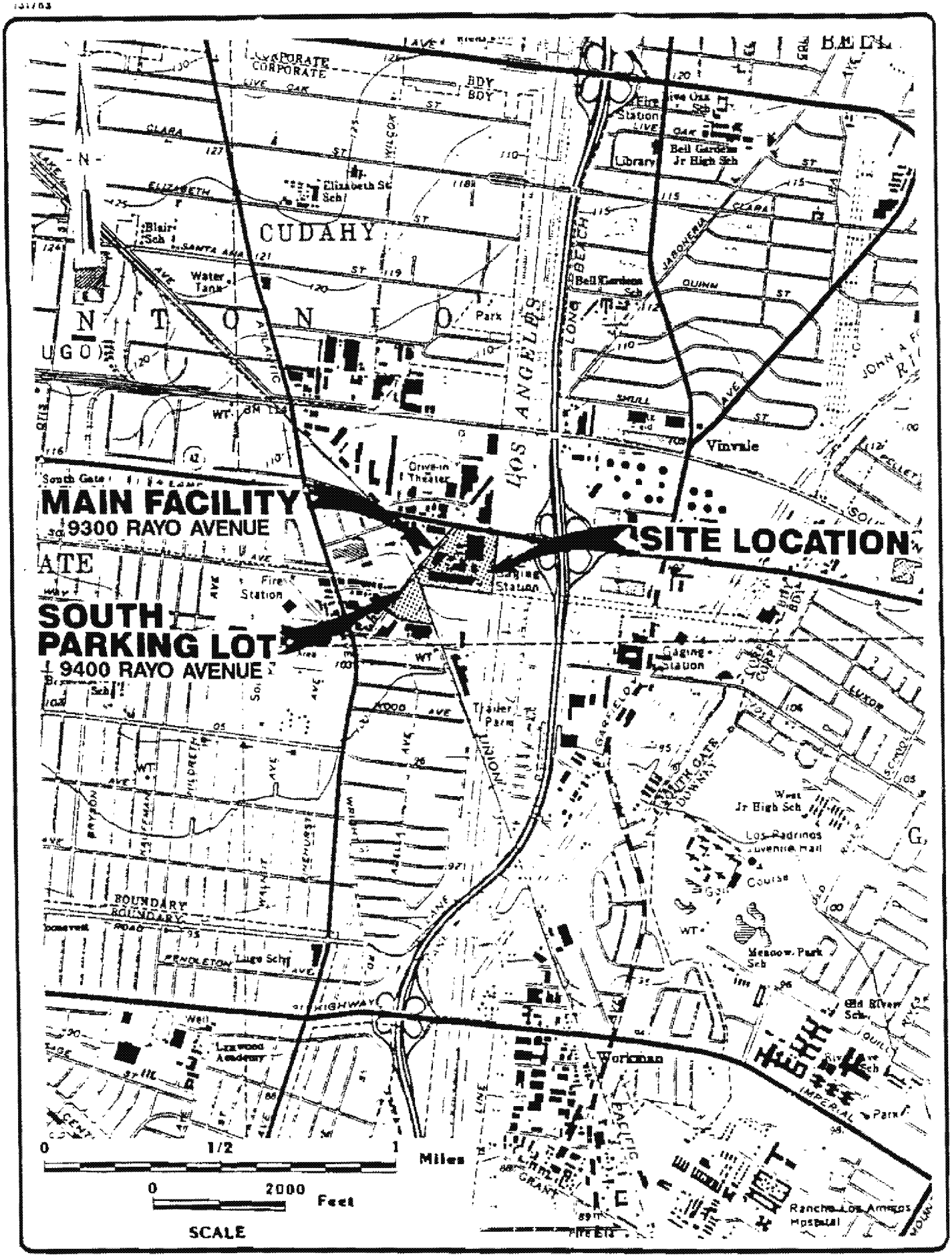
QA/QC:_____

Table 2
Well Completion Details
Dial Corporation
9300 Rayo Avenue, South Gate, California
Los Angeles

Well Number	VW-7		
Date Installed	8/17/92		
Well Permit	NA		
Casing Material	Sch 40 PVC		
Well Box Style	EMCO-Wheaton		
A. Boring Diameter (inches)	10.0		
B. Casing Diameter (inches)	2.0		
C. Total Depth of Boring (feet)	51.0		
D. Total Depth of Well (feet)	50.0		
E. Top of Casing Elevation (feet)	NA		
F. Top of Well Box Elevation (feet)	NA		
G. Perforated Interval			
Perforation Size (inches)	0.02		
Perforation Type	machine slot		
Depth of Bottom (feet)	15.0	30.0	50.0
H. Depth of Top (feet)	5.0	20.0	35.0
Length (feet)	10.0	10.0	15.0
I. Surface Seal			
Material	concrete		
Depth of Bottom (feet)	2.0		
Depth of Top (feet)	0.0		
Thickness (feet)	2.0		
J. Backfill-Seal(s)			
Material	bentonite		
Depth of Bottom (feet)	5.0	20.0	35.0
Depth of Top (feet)	2.0	15.0	30.0
Thickness (feet)	3.0	5.0	5.0
K. Gravel Pack(s)			
Material	2/12 Lonestar		
Depth to Bottom (feet)	15.0	30.0	51.0
Depth to Top (feet)	5.0	20.0	35.0
Thickness (feet)	10.0	10.0	16.0
L. Bottom Seal			
Material	native		
Depth of Bottom (feet)	51.0		
Depth of Top (feet)	50.0		
Thickness (feet)	1.0		

* vebal approval by Al Bragg, Los An

FIGURES



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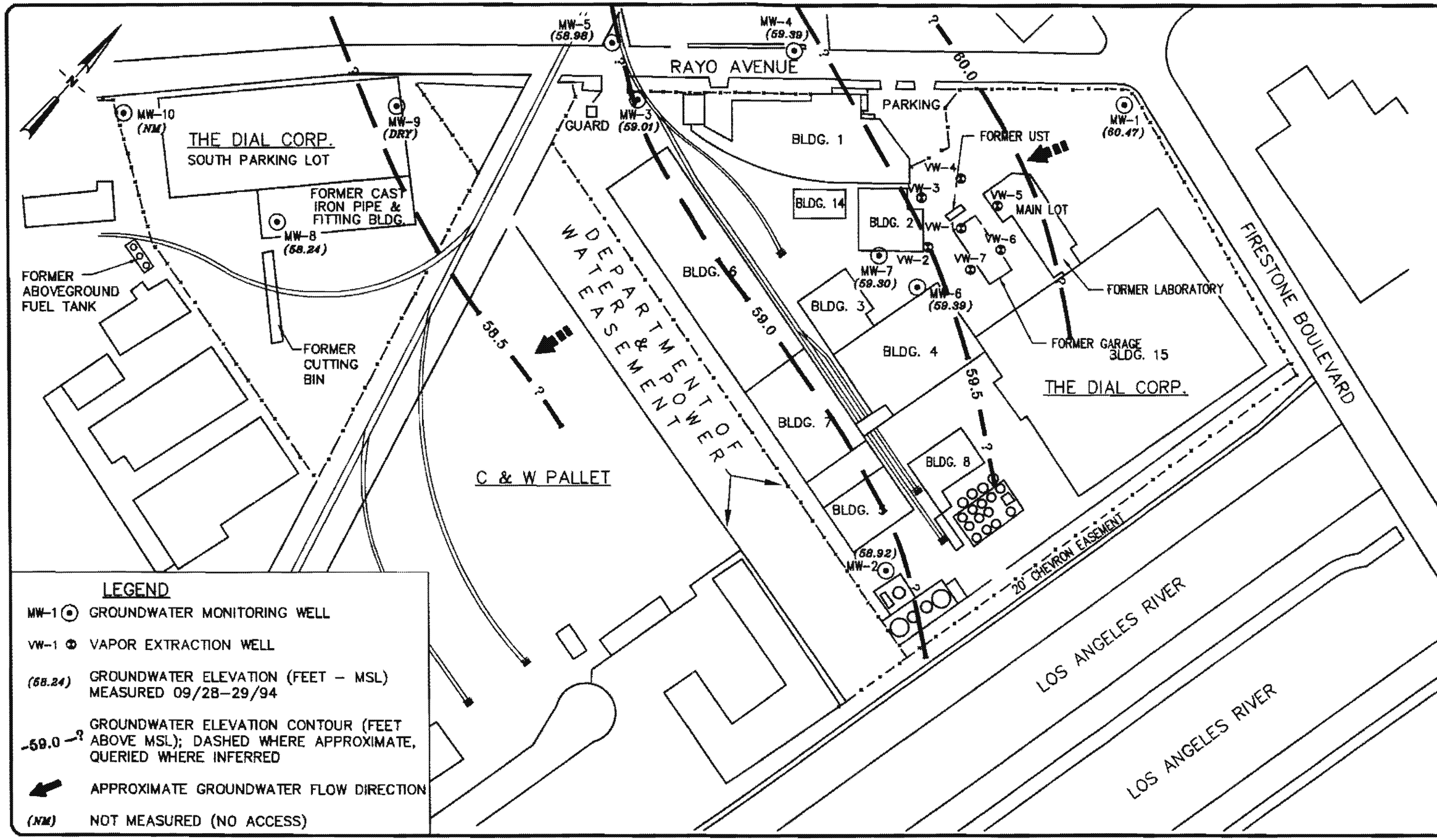
THE DIAL CORPORATION
9300 AND 9400 RAYO AVENUE
SOUTH GATE, CALIFORNIA

SITE LOCATION MAP

FIGURE 1

PROJECT NO. 0H93-001.05



EMCON Associates

0 50 100 FEET
SCALE

THE DIAL CORPORATION
9300 & 9400 RAYO AVENUE
MAIN LOT – SOUTH PARKING LOT
SOUTH GATE, CALIFORNIA

GROUNDWATER CONTOUR MAP, SEPTEMBER 1994

FIGURE 2

PROJECT NO. 0H93-001.05

CADD FILE: 00105-02
DATE LAST REVISED: 11/17/94

ATTACHMENT 1

GROUNDWATER SAMPLING PROCEDURES AND ANALYTICAL METHODOLOGY

ATTACHMENT 1

GROUNDWATER SAMPLING PROCEDURES AND ANALYTICAL METHODOLOGY

Prior to collecting a groundwater sample, the depth to water and well depth in the site wells, including those not scheduled for sampling, were measured using an electronic sounder. The measurements were taken from a surveyed reference point and were read to the nearest 0.01 foot. Using a submersible pump, each well was purged a minimum of three casing volumes of water. During pumping, purged water was monitored for temperature, pH, and specific conductance to assess if formation water has entered the well. A minimum of three measurements were collected within the calculated purge volume. For low yield wells where recovery exceeds 2 hours, the well was evacuated to dryness once.

When the above-described parameters were stabilized, the water level in the well was allowed to recover to approximately static conditions. After recovery, representative groundwater samples were collected from each well using a Teflon bailer. These samples were collected and placed into 40 ml VOA containers, supplied by the laboratory, with the appropriate preservative. After collection and placement into the VOA containers, the groundwater samples were labeled and stored in an ice-cooled, insulated container and transported to a California-certified laboratory along with appropriate chain-of-custody documentation. Groundwater produced during well purging was contained in sealed Department of Transportation-approved 55-gallon steel drums. The drums were labeled and retained on site pending consideration of appropriate disposal options.

Equipment that was used to collect or come into contact with the groundwater in each well was thoroughly steam cleaned and was rinsed with deionized water. Cleaning of the equipment occurred before sampling began, between each well, and upon completion of the sampling program. A new bailer cord was used for each well sample and was discarded after the completion of the sampling program.

Groundwater samples were collected and analyzed for the following:

Analyte	Method	Detection Limit
Total petroleum hydrocarbons (TPH)	California DTSC Draft LUFT Method	0.50 mg/l
Volatile Organic Compounds (VOCs)	U.S. EPA Method 8260	0.1 to 5 µg/l

Groundwater samples collected followed chain-of-custody documentation procedures from sample collection to final analysis (Attachment 2). The group of groundwater samples collected were accompanied by completed laboratory analysis request forms that included information as to the date and time sample was collected, sample name, sample identification, and sample type.

ATTACHMENT 2

CERTIFIED ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

GOLDEN STATE/CAS
LABORATORIES INC

October 8, 1994

Mike Flack
EMCON Associates
3300 North San Fernando Blvd.
Burbank, CA 91504

Re: **Dial Corporation/Project #H93-005.01**

Dear Mike:

Enclosed are the results of the samples submitted to our lab on September 30, 1994. For your reference, these analyses have been assigned our service request number L943121.

All analyses were performed in accordance with our laboratory's quality assurance program. Golden State / CAS is certified for environmental analyses by the California Department of Health Services (Certificate # 1296/Expiration - December 1994).

Please call if you have any questions.

Respectfully submitted,

Golden State / CAS Laboratories, Inc.

Elaine R. Thomas for
Dr. B. Gene Bennett
Laboratory Director

GB/kr

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM

Laboratory Name:	Golden State / CAS Laboratories, Inc.
Address:	6925 Canoga Avenue, Canoga Park, CA 91303
Telephone:	(818) 587-5550
Laboratory Certification (ELAP) No.:	1296
Expiration Date:	December 1994
Laboratory Director's Name:	Dr. B. Gene Bennett
Laboratory Director's Signature:	Elaine R Thomas for Dr. B Gene Bennett
Client:	EMCON Associates
Project No.:	Dial Corporation/#H93-005.01
Analytical Method:	EPA Method 8260
Date Sampled:	09/29/94
Date Received:	09/30/94
Date Reported:	10/08/94
Sample Matrix:	Water
Chain of Custody Received:	Yes
Sample Condition:	
--Sample Headspace Description (%):	0% Headspace
--Sample Container Material:	VOA Vial

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM FOR PETROLEUM HYDROCARBONS

Laboratory Name:	Golden State / CAS Laboratories, Inc.
Address:	6925 Canoga Avenue, Canoga Park, CA 91303
Telephone:	(818) 587-5550
Laboratory Certification (ELAP) No.:	1296
Expiration Date:	December 1994
Laboratory Director's Name:	Dr. B. Gene Bennett
Laboratory Director's Signature:	Elaine R. Thomas for Dr. B. Gene Bennett
Client:	EMCON Associates
Project No.:	Dial Corporation/#H93-005.01
Analytical Method:	EPA Method 8015(Modified)*
Date Sampled:	09/29/94
Date Received:	09/30/94
Date Reported:	10/08/94
Sample Matrix:	Water
Chain of Custody Received:	Yes
Sample Condition:	
--Sample Headspace Description (%):	0% Headspace
--Sample Container Material:	VOA Vial

* California Department of Health Services LUFT Method

Analytical Test Result

Client: EMCON Associates **Service Request No.:** L943121
Project: Dial Corporation/#H93-005.01

EPA Method 8260
Reporting Unit: µg/L (ppb)

	***Date Analyzed:**	10/03/94	10/03/94	10/03/94
	Dilution Factor:	1	1	1
	Lab Sample I.D.:	L943121-MB	L943121-001	L943121-002
	Client Sample I.D.:	Method Blank	MW-1	MW-2
Compound	**MDL**			
Bromobenzene	0.2	ND	ND	ND
Bromochloromethane	0.4	ND	ND	ND
Bromodichloromethane	0.2	ND	ND	ND
Bromoform	0.2	ND	ND	ND
Bromomethane	0.3	ND	ND	ND
Carbon tetrachloride	0.3	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Chloroform	0.3	ND	ND	ND
Chloromethane	0.5	ND	ND	ND
Dibromochloromethane	0.2	ND	ND	ND
Dibromomethane	0.2	ND	ND	ND
Dichloromethane (Methylene Chloride)	2	ND	ND	ND
Dichlorodifluoromethane	0.3	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	0.4	ND	ND	0.4(tr)
1,2-Dichloroethane (1,2-DCA)	0.3	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	0.3	ND	ND	ND
trans-1,2-Dichloroethylene	0.4	ND	ND	ND
cis-1,2-Dichloroethylene	0.2	ND	ND	ND
1,2-Dichloropropane	0.3	ND	ND	ND
cis-1,3-Dichloropropylene	0.2	ND	ND	ND
trans-1,3-Dichloropropylene	0.2	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.2	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2	ND	ND	ND
Tetrachloroethylene(PCE)	0.4	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	0.3	ND	ND	0.7
1,1,2-Trichloroethane (1,1,2-TCA)	0.2	ND	ND	ND
Trichloroethylene (TCE)	0.4	ND	ND	ND
1,2,3-Trichloropropane	0.3	ND	ND	ND
Trichlorofluoromethane	0.3	ND	ND	ND
Vinyl chloride (VC)	0.4	ND	ND	ND
Benzene	0.3	ND	ND	2
Chlorobenzene	0.5	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND
1,3-Dichlorobenzene	0.6	ND	ND	ND
1,4-Dichlorobenzene	0.2	ND	ND	ND
Ethyl benzene	0.5	ND	ND	0.5
Toluene	0.4	ND	1	4
Total Xylenes	0.6	ND	0.8	4

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Analytical Test Result

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01

Service Request No.: L943121

EPA Method - 8260 (cont.)
Reporting Unit: µg/L (ppb)

*Date Analyzed:	10/03/94	10/03/94	10/03/94
Dilution Factor:	1	1	1
Lab Sample I.D.:	L943121-MB	L943121-001	L943121-002
Client Sample I.D.:	Method Blank	MW-1	MW-2

Compound	MDL			
Acetone	3	ND	ND	5(tr)
n-Butylbenzene	0.1	ND	ND	ND
sec-Butylbenzene	0.2	ND	ND	ND
tert-Butylbenzene	0.2	ND	ND	ND
2-Chloroethylvinyl ether	0.3	ND	ND	ND
2-Chlorotoluene	0.2	ND	ND	ND
4-Chlorotoluene	0.2	ND	ND	ND
1,3-Dichloropropane	0.3	ND	ND	ND
2,2-Dichloropropane	0.3	ND	ND	ND
1,1-Dichloropropylene	0.3	ND	ND	ND
Ethylene dibromide (EDB)	0.3	ND	ND	ND
Hexachlorobutadiene	0.4	ND	ND	ND
Isopropylbenzene	0.1	ND	ND	ND
p-Isopropyltoluene	0.2	ND	ND	ND
Methyl Ethyl Ketone	2	ND	ND	ND
Methyl Isobutyl Ketone	3	ND	ND	ND
Naphthalene	0.4	ND	ND	ND
n-Propylbenzene	0.2	ND	ND	ND
Styrene	0.1	ND	ND	ND
1,2,3-Trichlorobenzene	0.2	ND	ND	ND
1,2,4-Trichlorobenzene	0.2	ND	ND	ND
1,2,4-Trimethylbenzene	0.1	ND	ND	ND
1,3,5-Trimethylbenzene	0.2	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	2	ND	ND	ND
1,2-Dibromo-3-Chloropropane (DBCP)	0.2	ND	ND	ND

Surrogate	SPK CONC	ACP%	%RC	%RC	%RC
Pentafluorobenzene	25	70-130	82	93	87
Toluene - D_8	25	88-120	107	107	107
4-Bromofluorobenzene	25	86-115	107	105	105

MDL Method Detection Limit
ND None Detected at or above detection limit
tr trace level

SPK CONC = Spike Concentration; ACP% = Acceptable Range of Percent; %RC = % Recovery
* Date Analyzed using purge and trap technology (EPA Method 5030)

Approved by Elaine R Thomas Date 10/10/94

Analytical Test Result

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01

Service Request No.: L943121

EPA Method 8260
Reporting Unit: µg/L (ppb)

	***Date Analyzed:**	10/04/94	10/04/94
	Dilution Factor:	1	1
	Lab Sample I.D.:	L943121-003	L943121-004
	Client Sample I.D.:	MW-6	MW-7
Compound	**MDL**		
Bromobenzene	0.2	ND	ND
Bromochloromethane	0.4	ND	ND
Bromodichloromethane	0.2	ND	ND
Bromoform	0.2	ND	ND
Bromomethane	0.3	ND	ND
Carbon tetrachloride	0.3	ND	ND
Chloroethane	0.5	ND	ND
Chloroform	0.3	ND	0.7
Chloromethane	0.5	ND	ND
Dibromochloromethane	0.2	ND	ND
Dibromomethane	0.2	ND	ND
Dichloromethane (Methylene Chloride)	2	ND	ND
Dichlorodifluoromethane	0.3	ND	ND
1,1-Dichloroethane (1,1-DCA)	0.4	0.8	3
1,2-Dichloroethane (1,2-DCA)	0.3	ND	ND
1,1-Dichloroethylene (1,1-DCE)	0.3	ND	0.4(tr)
trans-1,2-Dichloroethylene	0.4	ND	ND
cis-1,2-Dichloroethylene	0.2	ND	2
1,2-Dichloropropane	0.3	ND	ND
cis-1,3-Dichloropropylene	0.2	ND	ND
trans-1,3-Dichloropropylene	0.2	ND	ND
1,1,1,2-Tetrachloroethane	0.2	ND	ND
1,1,2,2-Tetrachloroethane	0.2	ND	ND
Tetrachloroethylene(PCE)	0.4	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	0.3	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	0.2	ND	ND
Trichloroethylene (TCE)	0.4	0.4(tr)	ND
1,2,3-Trichloropropane	0.3	ND	2
Trichlorofluoromethane	0.3	ND	ND
Vinyl chloride (VC)	0.4	ND	0.5
Benzene	0.3	54	250
Chlorobenzene	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
1,3-Dichlorobenzene	0.6	ND	ND
1,4-Dichlorobenzene	0.2	ND	ND
Ethyl benzene	0.5	0.8	5
Toluene	0.4	5	9
Total Xylenes	0.6	2	6

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Analytical Test Result

Client: EMCON Associates **Service Request No.:** L943121
Project: Dial Corporation/#H93-005.01

EPA Method - 8260 (cont.)
Reporting Unit: µg/L (ppb)

***Date Analyzed:**	10/04/94	10/04/94
Dilution Factor:	1	1
Lab Sample I.D.:	L943121-003	L943121-004
Client Sample I.D.:	MW-6	MW-7

Compound	MDL		
Acetone	3	ND	3(tr)
n-Butylbenzene	0.1	ND	ND
sec-Butylbenzene	0.2	ND	ND
tert-Butylbenzene	0.2	ND	ND
2-Chloroethylvinyl ether	0.3	ND	ND
2-Chlorotoluene	0.2	ND	ND
4-Chlorotoluene	0.2	ND	ND
1,3-Dichloropropane	0.3	ND	ND
2,2-Dichloropropane	0.3	ND	ND
1,1-Dichloropropylene	0.3	ND	ND
Ethylene dibromide (EDB)	0.3	ND	ND
Hexachlorobutadiene	0.4	ND	ND
Isopropylbenzene	0.1	ND	0.4(tr)
p-Isopropyltoluene	0.2	ND	ND
Methyl Ethyl Ketone	2	ND	ND
Methyl Isobutyl Ketone	3	ND	ND
Naphthalene	0.4	ND	ND
n-Propylbenzene	0.2	ND	ND
Styrene	0.1	ND	ND
1,2,3-Trichlorobenzene	0.2	ND	ND
1,2,4-Trichlorobenzene	0.2	ND	ND
1,2,4-Trimethylbenzene	0.1	ND	ND
1,3,5-Trimethylbenzene	0.2	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	2	ND	ND
1,2-Dibromo-3-Chloropropane (DBCP)	0.2	ND	ND

Surrogate	SPK CONC	ACP%	%RC	%RC
Pentafluorobenzene	25	70-130	87	88
Toluene - D_8	25	88-120	108	106
4-Bromofluorobenzene	25	86-115	106	108

MDL Method Detection Limit
ND None Detected at or above detection limit
tr trace level

SPK CONC = Spike Concentration; ACP% = Acceptable Range of Percent; %RC = % Recovery
* Date Analyzed using purge and trap technology (EPA Method 5030)

Approved by Elaine R Thomas Date 10/10/94

GOLDEN STATE / CAS LABORATORIES, INC.

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01
Sample Matrix: Water

Service Request No.: L943121

ANALYTICAL TEST RESULT

Reporting Unit: μg/L (ppb)

*DATE ANALYZED			10/03/94	10/03/94	10/03/94	10/03/94
DILUTION FACTOR			1	1	1	1
LAB SAMPLE I.D.			L943121-MB	L943121-001	L943121-002	L943121-003
CLIENT SAMPLE I.D.			Method Blank	MW-1	MW-2	MW-6
PETROLEUM HYDROCARBONS		**MDL**				
Gasoline (EPA 8015M)		40	ND	ND	ND	250
Surrogate	**Spk Conc**	**ACP%**	**%RC**	**%RC**	**%RC**	**%RC**
a,a,a-Trifluorotoluene	50	60-120	100	101	105	NA

*Date Analyzed = Date Extracted using Purge and Trap Technology (EPA Method 5030)
MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
Spk Conc = Spike Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery
NA = Not Applicable because of the sample matrix. The chromatogram showed target components that interfered with determination of the surrogate.

Approved By Elaine R. Thomas Date 10/10/94

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GOLDEN STATE / CAS LABORATORIES, INC.

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01
Sample Matrix: Water

Service Request No.: L943121

ANALYTICAL TEST RESULT

Reporting Unit: μg/L (ppb)

*DATE ANALYZED			10/03/94			
DILUTION FACTOR			1			
LAB SAMPLE I.D.			L943121-004			
CLIENT SAMPLE I.D.			MW-7			
PETROLEUM HYDROCARBONS		**MDL**				
Gasoline (EPA 8015M)		40	610			
Surrogate	**Spk Conc**	**ACP%**	**%RC**			
a,a,a-Trifluorotoluene	50	60-120	NA			

*Date Analyzed = Date Extracted using Purge and Trap Technology (EPA Method 5030)
MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
Spk Conc = Spike Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery
NA = Not Applicable because of the sample matrix. The chromatogram showed target components that interfered with determination of the surrogate.

Approved By Elaine R. Thomas Date 10/10/94

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GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates **Service Request No.:** L943121
Project: Dial Corporation/#H93-005.01
Sample Matrix: Water

EPA Method 8260
µg/L (ppb)

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Date Performed: 10/05/94
Batch No.: 100394
Lab Code: L943121-001

Analyte	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethene	5.0	4.9	98	4.7	94	4	65-145	14
Benzene	5.0	5.7	114	6.1	122	7	76-127	11
Trichloroethene	5.0	5.5	110	6.0	120	9	71-120	14
Toluene	5.0	6.1	102	6.3	106	3	76-125	13
Chlorobenzene	5.0	4.9	98	5.4	108	10	75-130	14

II. Laboratory Quality Control Check Sample

Date Performed: 10/04/94
Batch No.: 100394
Lab Code: L943121-LCS

Analyte	SPK CONC	Result	% Recovery	ACP %
1,1-Dichloroethene	5.0	4.1	82	80-120
Benzene	5.0	5.6	112	80-120
Trichloroethene	5.0	5.5	110	80-120
Toluene	5.0	5.6	112	80-120
Chlorobenzene	5.0	5.0	100	80-120

SPK CONC = Spiking Concentration;
%MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
RPD = Relative Percent Difference; ACP = Acceptable Range of Percent

Approved by Elaine R. Thomas Date 10/10/94

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Client: EMCON Associates **Service Request No.:** L943121
Project: Dial Corporation/#H93-005.01
Sample Matrix: Water

QA/QC REPORT

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 10/03/94
BATCH #: K093094
LAB SAMPLE I.D.: L943106-002

ANALYTE	Reporting Unit	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
TPH as Gasoline	µg/L (ppb)	1000	1050	105	1130	130	7	70-140	25

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 09/30/94
BATCH #: K093094
LAB SAMPLE I.D.: L943121-LCS

ANALYTE	Reporting Unit	SPK CONC	RESULT	%RECOVERY	ACP %
TPH as Gasoline	µg/L (ppb)	1000	1020	102	80-120

III. Calibration Standards

COMPOUND	INITIAL RF_{ave} Date: 07/21/94	%RSD ≤20%	DAILY RF Date: 10/13/94	%DIFF W/RF_{ave} ≤ ±15%
TPH as Gasoline	9.186×10^{-5}	5	9.175×10^{-5}	<1

SPK CONC = Spiking Concentration;
%MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
INITIAL RF_{ave} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
%RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

Approved By: Elaine R. Thomas DATE: 10/10/94

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01

Service Request No.: L943121

III. Calibration Standard - EPA Method 8260

Most Recent Initial Calibration Date: 08/22/94
Daily Calibration Date: 10/03/94
Supply Source: AccuStandard

Compound	Initial RF_{ave}	%RSD RF	Daily w/RF_{ave}	%Diff
Bromobenzene	0.768	7	0.808	5
Bromochloromethane	0.341	4	0.365	7
Bromodichloromethane	1.238	9	1.347	9
Bromoform	1.105	11	1.267	15
Bromomethane	0.351	6	0.351	<1
Carbon tetrachloride	1.295	3	1.068	18
Chloroethane	0.264	12	0.210	20
Chloroform	1.558	3	1.623	4
Chloromethane	0.338	12	0.303	10
Dibromochloromethane	1.008	7	1.202	19
Dibromomethane	0.622	14	0.657	6
Dichloromethane (Methylene chloride)	0.574	4	0.510	11
Dichlorodifluoromethane	0.992	15	1.033	4
1,1-Dichloroethane (1,1-DCA)	1.090	10	1.128	3
1,2-Dichloroethane (1,2-DCA)	1.294	11	1.522	18
1,1-Dichloroethylene (1,1-DCE)	0.444	3	0.398	10
trans-1,2-Dichloroethylene	0.440	5	0.430	2
cis-1,2-Dichloroethylene	0.499	2	0.559	12
1,2-Dichloropropane	0.373	11	0.402	8
cis-1,3-Dichloropropylene	0.795	9	0.860	8
trans-1,3-Dichloropropylene	0.874	8	1.004	15
1,1,1,2-Tetrachloroethane	0.598	9	0.722	21
1,1,2,2-Tetrachloroethane	0.815	14	0.951	17
Tetrachloroethylene(PCE)	0.701	10	0.816	16
1,1,1-Trichloroethane (1,1,1-TCA)	1.321	12	1.406	6
1,1,2-Trichloroethane (1,1,2-TCA)	0.392	12	0.498	27
Trichloroethylene (TCE)	0.423	11	0.463	9
1,2,3-Trichloropropane	0.774	14	0.968	25
Trichlorofluoromethane	0.778	11	1.098	41
Vinyl chloride (VC)	0.350	11	0.323	8
Benzene	0.983	2	1.083	10
Chlorobenzene	1.065	12	1.062	<1

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GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01

Service Request No.: L943121

III. Calibration Standard - EPA Method 8260 (cont'd)

Most Recent Initial Calibration Date: 08/22/94
Daily Calibration Date: 10/03/94
Supply Source: AccuStandard

Compound	Initial RF_{ave}	%RSD	Daily RF	%Diff w/RF_{ave}
1,2-Dichlorobenzene	1.095	11	1.147	5
1,3-Dichlorobenzene	1.155	11	1.161	1
1,4-Dichlorobenzene	1.206	9	1.203	<1
Ethyl benzene	2.236	9	2.321	4
Toluene	0.770	6	0.777	1
m,p-Xylenes	0.647	3	0.666	3
o-Xylene	0.668	10	0.620	7
Acetone	0.386	6	0.425	10
n-Butylbenzene	2.061	10	1.911	7
sec-Butylbenzene	2.290	8	2.138	7
tert-Butylbenzene	1.556	7	1.557	<1
2-Chloroethylvinyl ether	0.301	7	0.371	23
2-Chlorotoluene 0.647	4.790	14	4.616	4
4-Chlorotoluene 0.668	2.270	10	2.108	7
1,3-Dichloropropane	0.898	13	0.956	6
2,2-Dichloropropane	1.158	11	1.269	10
1,1-Dichloropropylene	0.770	12	0.895	16
Ethylene dibromide (EDB)	0.898	9	0.988	10
Hexachlorobutadiene	0.776	9	0.922	19
Isopropylbenzene	2.115	6	2.178	3
p-Isopropyltoluene	1.884	13	1.714	9
Methyl Ethyl Ketone	0.413	6	0.511	24
Methyl Isobutyl Ketone	0.645	9	0.855	33
Naphthalene	1.656	15	1.663	<1
n-Propylbenzene	4.776	14	4.616	3
Styrene	1.344	7	1.409	5
1,2,3-Trichlorobenzene	1.001	13	1.174	17
1,2,4-Trichlorobenzene	1.120	10	1.181	5
1,2,4-Trimethylbenzene	1.929	10	1.841	5
1,3,5-Trimethylbenzene	1.894	8	1.873	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.666	12	0.584	12
1,2-Dibromo-3-Chloropropane (DBCP)	0.411	3	0.581	41

INITIAL RF_{ave} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
%RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

Approved by Elaine R. Thomas Date 10/10/94

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
Project: Dial Corporation/#H93-005.01

Service Request No.: L943121

III. Calibration Standard - EPA Method 8260

Most Recent Initial Calibration Date: 08/22/94
Daily Calibration Date: 10/04/94
Supply Source: AccuStandard

Compound	Initial RF_{ave}	%RSD	Daily RF	%Diff w/RF_{ave}
Bromobenzene	0.768	7	0.901	17
Bromochloromethane	0.341	4	0.364	7
Bromodichloromethane	1.238	9	1.380	11
Bromoform	1.105	11	1.307	18
Bromomethane	0.351	6	0.395	13
Carbon tetrachloride	1.295	3	1.352	4
Chloroethane	0.264	12	0.218	17
Chloroform	1.558	3	1.749	12
Chloromethane	0.338	12	0.360	7
Dibromochloromethane	1.008	7	1.197	19
Dibromomethane	0.622	14	0.676	9
Dichloromethane (Methylene chloride)	0.574	4	0.569	1
Dichlorodifluoromethane	0.992	15	1.380	39
1,1-Dichloroethane (1,1-DCA)	1.090	10	1.196	10
1,2-Dichloroethane (1,2-DCA)	1.294	11	1.523	18
1,1-Dichloroethylene (1,1-DCE)	0.444	3	0.450	1
trans-1,2-Dichloroethylene	0.440	5	0.499	13
cis-1,2-Dichloroethylene	0.499	2	0.566	13
1,2-Dichloropropane	0.373	11	0.412	10
cis-1,3-Dichloropropylene	0.795	9	0.920	16
trans-1,3-Dichloropropylene	0.874	8	1.037	19
1,1,1,2-Tetrachloroethane	0.598	9	0.719	20
1,1,2,2-Tetrachloroethane	0.815	14	0.972	19
Tetrachloroethylene(PCE)	0.701	10	0.813	16
1,1,1-Trichloroethane (1,1,1-TCA)	1.321	12	1.582	20
1,1,2-Trichloroethane (1,1,2-TCA)	0.392	12	0.454	16
Trichloroethylene (TCE)	0.423	11	0.469	11
1,2,3-Trichloropropane	0.774	14	0.819	6
Trichlorofluoromethane	0.778	11	0.791	2
Vinyl chloride (VC)	0.350	11	0.371	6
Benzene	0.983	2	1.182	20
Chlorobenzene	1.065	12	1.183	11

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91303 ■ 818 587-5550 ■ FAX 818 587-5555

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

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Project: Dial Corporation/#H93-005.01

III. Calibration Standard - EPA Method 8260 (cont'd)

Most Recent Initial Calibration Date: 08/22/94
Daily Calibration Date: 10/04/94
Supply Source: AccuStandard

Compound	Initial RF_{ave}	%RSD	Daily RF	%Diff w/RF_{ave}
1,2-Dichlorobenzene	1.095	11	1.270	16
1,3-Dichlorobenzene	1.155	11	1.277	11
1,4-Dichlorobenzene	1.206	9	1.328	10
Ethyl benzene	2.236	9	2.533	13
Toluene	0.770	6	0.872	13
m,p-Xylenes	0.647	3	0.709	10
0-Xylene	0.668	10	0.656	2
Acetone	0.386	6	0.337	13
n-Butylbenzene	2.061	10	2.110	2
sec-Butylbenzene	2.290	8	2.318	1
tert-Butylbenzene	1.556	7	1.754	13
2-Chloroethylvinyl ether	0.301	7	0.351	17
2-Chlorotoluene	4.790	14	5.124	7
4-Chlorotoluene	2.270	10	2.556	13
1,3-Dichloropropane	0.898	13	1.003	12
2,2-Dichloropropane	1.158	11	1.357	17
1,1-Dichloropropylene	0.770	12	0.798	4
Ethylene dibromide (EDB)	0.898	9	0.981	9
Hexachlorobutadiene	0.776	9	0.902	16
Isopropylbenzene	2.115	6	2.333	10
p-Isopropyltoluene	1.884	13	1.933	3
Methyl Ethyl Ketone	0.413	6	0.367	11
Methyl Isobutyl Ketone	0.645	9	0.736	14
Naphthalene	1.656	15	1.713	3
n-Propylbenzene	4.776	14	5.124	7
Styrene	1.344	7	1.476	10
1,2,3-Trichlorobenzene	1.001	13	1.201	20
1,2,4-Trichlorobenzene	1.120	10	1.267	13
1,2,4-Trimethylbenzene	1.929	10	1.950	1
1,3,5-Trimethylbenzene	1.894	8	1.945	3
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.666	12	0.616	8
1,2-Dibromo-3-Chloropropane (DBCP)	0.411	3	0.492	20

INITIAL RF_{ave} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
%RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

Approved by Elaine R. Thomas Date 10/10/94

GOLDEN STATE/CAS
LABORATORIES, INC.
6925 CANOGA AVENUE ▪ CANOGA PARK, CA 91303
818 587-5550 ▪ FAX #818 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

L943121

DATE _____ PAGE ____ OF ____

COMPANY/ADDRESS EMCON ASSOCIATES
3300 N. SAN FERNANDO BLVD.
BURBANK CA 91504 PHONE (818) 841-1160
PROJECT NAME/LOCATON DIAL CORPORATION

PROJECT MNGR. MIKE FLACK
SAMPLERS SIGNATURE Jesus Casas

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH,Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel □ FC □ Gasoline □	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base/Nuc/Acid Organic GC/ms 625/8270	CAM Metals 6010/7000	SEE ATTACHED LIST	FOR ANALYSIS					REMARKS
MW-1	9-29-94	1045	L943121-1	H_2O	5									X						GROUNDWATER
MW-2		1320	2		5									X						" "
MW-6		1620	3		5									X						" "
MW-7		1645	4		5									X						" "

RELINQUISHED BY:	RECEIVED BY:	TURNAROUND REQUIREMENTS:	REPORT REQUIREMENTS:	INVOICE INFORMATION:	SAMPLE RECEIPT:
Jesus Casas Signature Emcon Firm 9/30/94 2:00p. Date/Time	Stuart S. Signature GC/CAS Firm 9/30/94 2:00p.m Date/Time	___ 24 hr ___ 48 hr ___ 5 day ___ Standard ___ Other (Specify) ___ Provide Verbal Preliminary Results Requested Report Date _____	___ I. Routine Report ___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples) ___ III. Data Validation Report (includes All Raw Data) ___ RWQCB	P.O. # _____ Bill to: _____	Shipping VIA: _____ Shipping #: _____ Condition: _____ Accepted for Analysis by: _____

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:	SPECIAL INSTRUCTIONS/COMMENTS:
Signature Firm Date/Time	Signature Firm Date/Time	Signature Firm Date/Time	Signature Firm Date/Time	PROJECT H93-005-01