

May 31, 2000

Ms. Donna Proffitt
Bank of America, N.A.
Environmental Services Department #305478
4000 MacArthur Boulevard, Suite 100
Newport Beach, California 92660

2570 ✓

Reference: Groundwater Monitoring Report (April 2000)
2585 Nicholson Street in San Leandro, California
ES# 305582
Versar Project No. 4422-001

Dear Ms. Proffitt:

Versar, Inc. (Versar) has prepared this groundwater monitoring report on behalf of Bank of America, N.A. (Bank of America) summarizing work performed at the property located at 2585 Nicholson Street in San Leandro, California (Site). Figures 1 and 2, Attachment I, present the Site location and Site layout, respectively. The following sections describe the scope of work, Site location, and Site background.

This letter report presents the results of the quarterly groundwater monitoring and sampling event conducted at the Site on April 13, 2000. The results of this monitoring event are presented graphically on Figures 3 and 4 in Attachment I, and are summarized in tables in Attachment II. This report has been prepared in response to the request by the Alameda County Health Care Services (ACHCS) letters dated July 14, 1999, and October 29, 1999, regarding groundwater monitoring at 2585 Nicholson Street, San Leandro, California.

The Site is located at 2585 Nicholson Street in San Leandro, California. The nearest cross street is Republic Avenue. The Site is currently occupied by Crane Works and consists of a single-story commercial office building at the north end of the property, and covered parking/work area over the western and southern edges of the property.

BACKGROUND

According to information presented in the McLaren/Hart soil and groundwater characterization report (McLaren/Hart, 1998), two underground storage tanks (USTs) were removed from the Site in 1991. Soil and groundwater samples collected during the UST removal activities identified total petroleum hydrocarbons (TPH) as diesel and gasoline in both media.

Reportedly, overexcavation was performed during UST removal activities. In 1992, Hageman-Aguiar (HA) performed an on Site soil and groundwater investigation, and installed one monitoring well (MW-1) on the central portion of the Site. Groundwater samples were collected by HA from MW-1 between 1992 and 1995. HA identified free-floating product in MW-1 during some of the sampling events, at a maximum thickness of 1.25 inches. An oil absorbent sock was placed in the well to collect the free-floating product. In 1998, McLaren/Hart performed a limited investigation of soil and groundwater, both on and off-Site. McLaren/Hart concluded that adequate definition of petroleum hydrocarbons in soil and groundwater had been completed, and that the contaminant plume was relatively stable with minimal off-Site migration of petroleum hydrocarbons. McLaren/Hart recommended installation of additional monitoring wells to confirm the direction of groundwater flow beneath the Site.

In April 1999, Versar installed four additional monitoring wells, and sampled all the Site wells, as described in our *Monitoring Well Installation and Groundwater Monitoring Report*, dated June 30, 1999. The monitoring well locations are depicted on Figure 2, Site Plan. Versar detected petroleum hydrocarbons as gasoline in the southern half of the Site; benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in well MW-1 near the center of the Site. The groundwater gradient was calculated to be approximately 0.001 feet/foot and flowing in a southeasterly direction.

Versar has been monitoring shallow groundwater condition at five wells on a quarterly basis since April 1999. Prior to April 1999, monitoring well MW-1 was sampled 11 times between June 1992 and September 1995.

In November 1999, Versar performed a Risk-Based Corrective Action (RBCA) analysis of residual petroleum hydrocarbons at the Site. The purpose for the RBCA analysis is to determine the magnitude of risk, if any, to human health associated with known Site soil and groundwater contamination. The analysis was prepared using default parameters and existing Site data. Versar's RBCA analysis found that residual concentrations of aromatic hydrocarbons in first encountered groundwater at the location of maximum impact do not present an actionable risk to human health.

In their July 14, 1999 letter, ACHCS requested information regarding the depth of gas, electric, and storm drain trenches adjacent to the Site, as depicted on Figure 2 of Versar's, June 30, 1999, *Monitoring Well Installation and Groundwater Sampling Report*. Utility information was obtained in October and November 1999 and reported in Versar's January 6, 2000, *Groundwater Monitoring and Utility Survey Report*. Versar measured the depth of utilities adjacent to the Site, as requested by ACHCS. The only utility identified with the potential to influence groundwater migration was identified upgradient from the Site. Based on this

information, Versar concluded there was no evidence that utilities are effecting plume migration at the Site and no further assessment is warranted.

In their April 27, 1999 letter, ACHCS requested semi-annual monitoring for TPH as diesel (TPHd) and stoddard solvent in well MW-1. The additional analyses were requested to address fluctuating concentrations of the constituents identified from historical data. A fuel fingerprint analysis will be performed on the groundwater sample from well MW-1 during the July 2000 monitoring event.

QUARTERLY GROUNDWATER MONITORING ACTIVITIES

Versar performed groundwater monitoring of the Site on April 13, 2000, sampling the five wells for TPH as gasoline (TPHg) and BTEX. Three of the wells were sampled for parameters indicative of intrinsic bio-remediation. Versar's quarterly groundwater monitoring program for the Site included the following tasks:

- Measure groundwater levels in monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5, and calculate the hydraulic gradient and flow direction;
- Purge and collect groundwater samples from the five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5);
- Obtain measurements of groundwater temperature, electrical conductivity, pH, oxidation/reduction potential (redox), and dissolved oxygen (DO) in monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5;
- Submit the groundwater samples to a California-certified analytical laboratory for analysis of one or more of the following TPHg, BTEX, methane, nitrate, sulfate, and alkalinity; and
- Prepare a letter report summarizing the results.

Groundwater Sampling Protocol

The methodology and protocol followed for the collection of groundwater samples during this groundwater sampling event are presented in Attachment III, Decontamination and Groundwater Monitoring Well Sampling Procedures.

Quarterly Groundwater Level Measurements

On April 13, 2000, the depth to groundwater in wells MW-1, MW-2, MW-3, MW-4 and MW-5 was measured to characterize groundwater flow direction and gradient. The depths to groundwater at each well, along with historical measurements, are presented in Table 1. Groundwater was measured to be flowing in an easterly direction, at a gradient of 0.002 feet per foot. Groundwater surface elevations are 0.09 to 0.28 foot higher than in January 2000. Figure 3 in Attachment I is a groundwater gradient map generated from the April 13, 2000 data.

Groundwater Sampling Activities

On April 13, 2000, groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-4 and MW-5. Prior to sampling, each well was purged of approximately three casing volumes of groundwater, and the water level allowed to recover to at least 80 percent of the pre-purge level. Measurements of temperature, pH, electrical conductivity, redox, and DO were recorded a minimum of three times during each purged well volume. The groundwater monitoring well purge tables are presented in Attachment V.

Groundwater samples collected from Site wells MW-1, MW-2, MW-3, MW-4, and MW-5 were analyzed for TPHg and BTEX. Groundwater samples collected from site wells MW-1, MW-2, and MW-3 were analyzed for methane, sulfate, and alkalinity by Excelchem Environmental Labs (Excelchem), California State Laboratory Certification No. 2119, and for nitrate by CLS Labs, California State Laboratory Certification No. 1233. The samples were collected, placed in containers, preserved, transported, and analyzed within the time constraints consistent with applicable United States EPA, California EPA, and Regional Water Quality Control Board (RWQCB) procedures, and in conformance with Versar's Decontamination and Groundwater Monitoring Well Sampling Procedures, presented in Attachment III. Purge water from the April 13, 2000 sampling event was stored on Site in two DOT-approved, 55-gallon steel drums pending disposal.

ANALYTICAL RESULTS

The analytical results of the TPHg and BTEX analyses are summarized in Table 2 in Attachment II. Figure 4 in Attachment I spatially depicts the analytical results for the January 20, 2000 groundwater monitoring event. The analytical results of the methane, nitrate, sulfate, and alkalinity analyses; and DO and redox measurements; are summarized in Table 3 in Attachment II. The laboratory analytical reports are included in Attachment V. The following is a summary of the analytical results:

- TPHg was detected in wells MW-1, MW-3, MW-4 and MW-5 at concentrations of 13 milligrams per liter (mg/L), 0.09 mg/L, 0.099 mg/L and 0.353 mg/L, respectively;
- Benzene was detected in wells MW-1, MW-2, MW-3, MW-4, and MW-5 at concentrations of 1,130 micrograms per liter ($\mu\text{g/L}$), 0.5 $\mu\text{g/L}$, 0.7 $\mu\text{g/L}$, 1.0 $\mu\text{g/L}$, and 3.5 $\mu\text{g/L}$, respectively;
- Toluene was only detected in well MW-1 at a concentration of 226 $\mu\text{g/L}$;
- Ethylbenzene was only detected in well MW-1 at a concentration of 335 $\mu\text{g/L}$; and
- Total xylene isomers was only detected in well MW-1 at a concentration of 1,410 $\mu\text{g/L}$.

In general, bioremediation indicator parameters (see Table 3) showed variations from the previous monitoring event results. While anaerobic biodegradation appears to be occurring, the data suggests anaerobic activity has decreased, which is believed to be correlated to the increase in petroleum constituent concentrations during the previous monitoring event.

CONCLUSIONS

Based on the results of this most recent quarterly groundwater monitoring event Versar has made the following conclusions.

- During the April 2000 monitoring event, the groundwater flow direction was calculated to be to the east, under a gradient of approximately 0.002 ft/ft. Groundwater surface elevations are 0.09 to 0.28 foot higher than in January 2000.
- TPHg and BTEX were detected in the samples collected from well MW-1. Low levels of TPHg and benzene were detected in the samples collected from wells MW-3, MW-4, and MW-5. Low levels of benzene were detected in the sample collected from well MW-2. Toluene, ethylbenzene, and total xylenes were not detected in the samples collected from wells MW-2, MW-3, MW-4, and MW-5. In general, concentrations of TPHg and BTEX during the April 2000 monitoring event decreased from the previous monitoring event. The data indicates that the area of residual contamination at the Site is located near the center of the property, in the vicinity of MW-1. The presence of TPHg and benzene at Site wells other than MW-1 may be the result of the rising groundwater table intersecting a smear zone of petroleum product. Groundwater is

currently at the highest elevation since monitoring of groundwater table elevation began in April 1999.

- Samples collected from wells MW-1, MW-2, and MW-3 to assess the potential for intrinsic bio-remediation suggest that anaerobic intrinsic biodegradation is occurring at the Site, as evidenced by nitrate concentrations being lower in MW-1, suggesting use of *this electron receptor in biological degradation*. However, the increase in petroleum concentrations observed during the previous monitoring event, which was believed to be a result of rising groundwater elevations intersecting a smear zone of petroleum constituents, appears to have lessened biodegradation activity. This is evidenced by a decrease in methane concentrations, and an increase in the redox results. It is anticipated that as groundwater elevations and petroleum constituent concentrations stabilize, biodegradation activity will increase.

FUTURE ACTIVITIES

Continued quarterly groundwater monitoring is planned for the Site to characterize groundwater fluctuations, flow direction, and contaminant concentrations. A fuel fingerprint analysis will be performed on well MW-1 during the next monitoring event. Continued analysis of intrinsic bio-remediation indicator parameters will also be performed during the next monitoring event. This information is required in considering closure for the Site by the ACHCS.

REFERENCES

Alameda County Health Care Services Agency. Letter to Mr. John Schovanec, Bank of America Environmental Services. Re: Groundwater monitoring at 2584 Nicholson Street, San Leandro, CA. Dated July 14, 1999.

United States Department of the Interior Geological Survey. Map. *San Leandro Quadrangle, 7.5 Minute Series (Topographic)*. 1959, Photorevised 1980.

Versar, Inc.. *Monitoring Well Installation and Groundwater Monitoring Report*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. June 30, 1999.

Versar, Inc.. *Groundwater Monitoring and Utility Survey Report*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. January 6, 2000.



Ms. Donna Proffitt

June 8, 2000

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Versar, Inc.. *Groundwater Monitoring Report, January 2000.* Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. March 21, 2000.

STATEMENT OF LIMITATIONS

The conclusions presented above are based on the agreed-upon scope of work outlined in the beginning of this report. Versar makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others and used by Versar. It is possible that information exists beyond the scope of this investigation. Also, changes in Site use may have occurred sometime in the past due to variations in rainfall, temperature, water usage, economic, agricultural, or other factors. Additional information that was not found or available to Versar at the time of the writing of this report may result in a modification of the conclusions presented. This report is not a legal opinion.

The services performed by Versar have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty expressed or implied is made.

This Quarterly Monitoring Report was prepared by Versar on behalf of Bank of America. Mr. Dale Anderson, Senior Environmental Technician, performed the groundwater sample collection. Mr. Tim Berger, Registered Geologist, prepared the report, and supervised the field activities. Mr. Scott Allin, Registered Environmental Assessor, reviewed the report.

Prepared by:

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Reviewed by:

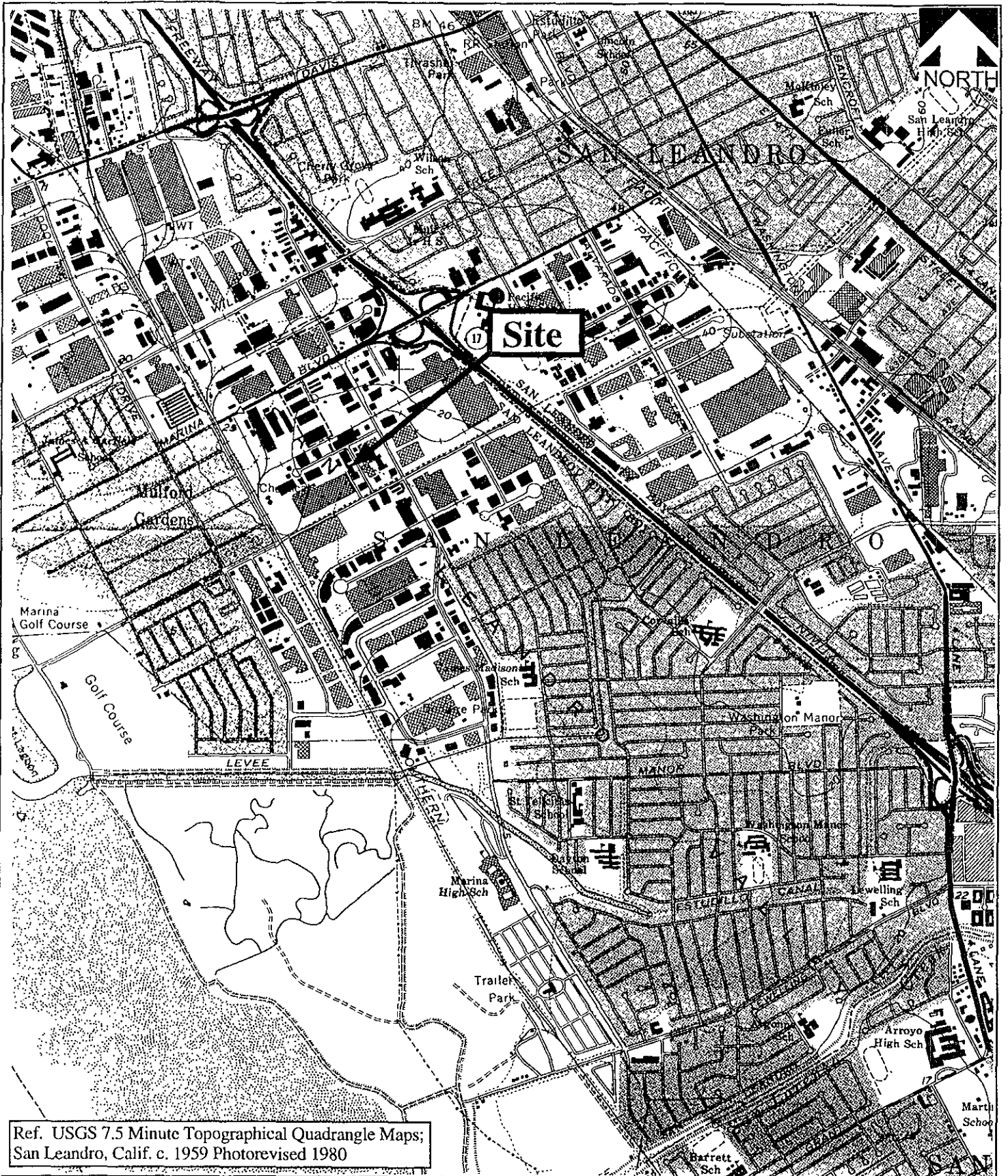
Scott Allin, R.E.A. 076223
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Versar - Pacific Region

- Attachment I - Figures
- Attachment II - Tables
- Attachment III - Decontamination and Groundwater Monitoring Well Sampling Procedures
- Attachment IV - Monitoring Well Purge Tables
- Attachment V - Laboratory Analytical Reports and Chain-of-Custody Documentation

cc: Amir Gholami (Alameda County)
Mike Bakaldin (City of San Leandro)

ATTACHMENT I

Figures



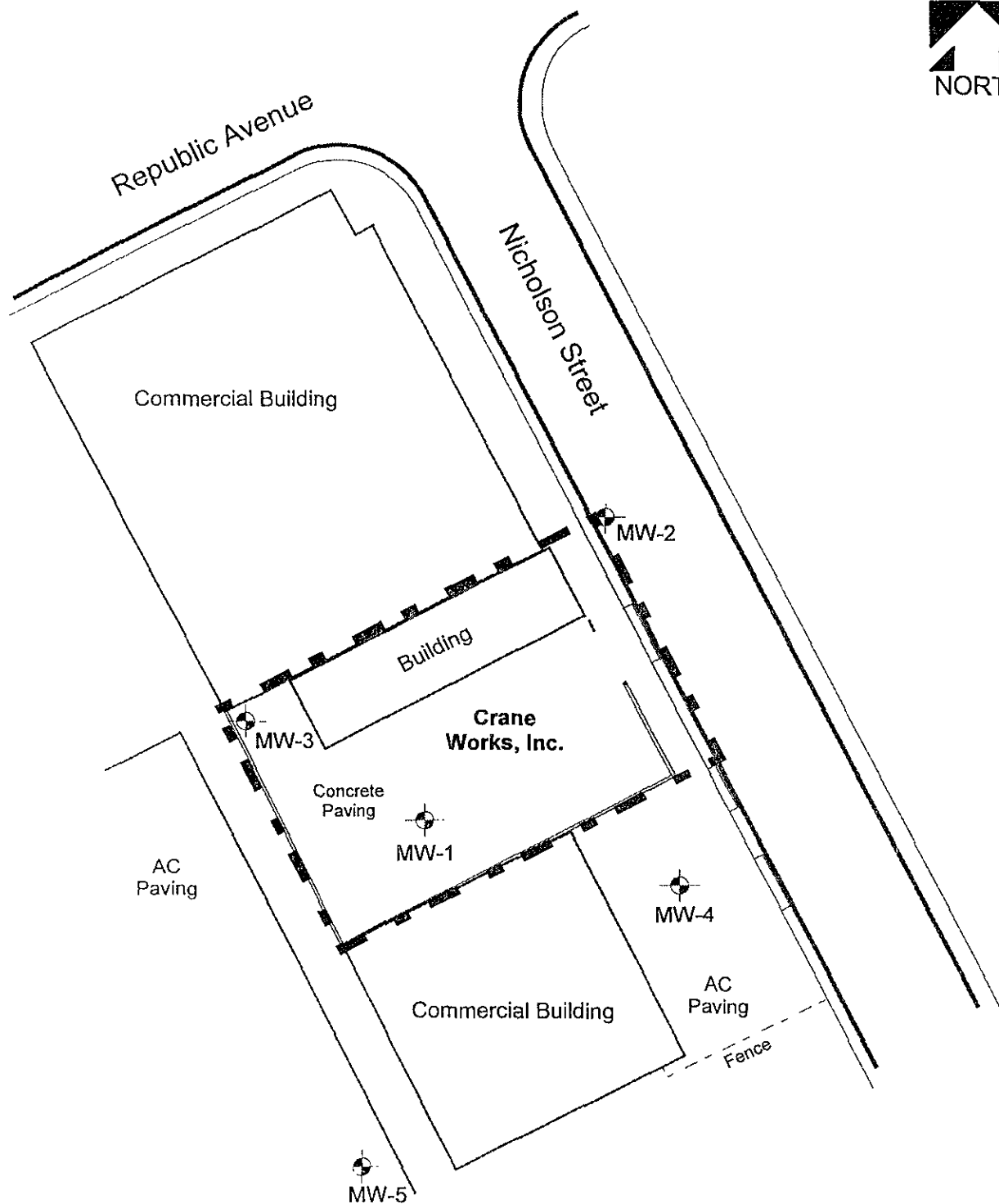
Ref. USGS 7.5 Minute Topographical Quadrangle Maps;
San Leandro, Calif. c. 1959 Photorevised 1980

Dr. By: Dale Anderson
Date: 5/10/99
Scale: 1 inch=2,000 feet
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SITE LOCATION
2585 Nicholson Street
San Leandro, California

Figure
1



(Scale - Feet)



Dr. By: Dale Anderson
Date: 5/10/99
Scale: 1 inch= 60 feet
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**SITE LAYOUT AND MONITORING
WELL LOCATION MAP**
2585 Nicholson Street
San Leandro, California

Figure
2



Republic Avenue

Nicholson Street

Commercial Building

MW-1
Depth to Water: 4.95'
G.W. Elevation: 10.32'

MW-2
Depth to Water: 3.61'
G.W. Elevation: 10.08'

MW-3
Depth to Water: 5.41'
G.W. Elevation: 10.47

Crane Works, Inc.

Concrete Paving

MW-4
Depth to Water: 5.06'
G.W. Elevation: 10.19'

AC Paving

Commercial Building

AC Paving

MW-5
Depth to Water: 6.15'
G.W. Elevation: 10.31'

10.40

10.20

Fence

10.30

Groundwater
Gradient: 0.002 ft/ft

Legend	
	Observation Well Location
10.05	Groundwater Contour Interval in Feet Above Mean Sea Level
	Groundwater Contour
	Groundwater Flow Direction

(Scale - Feet)



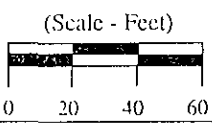
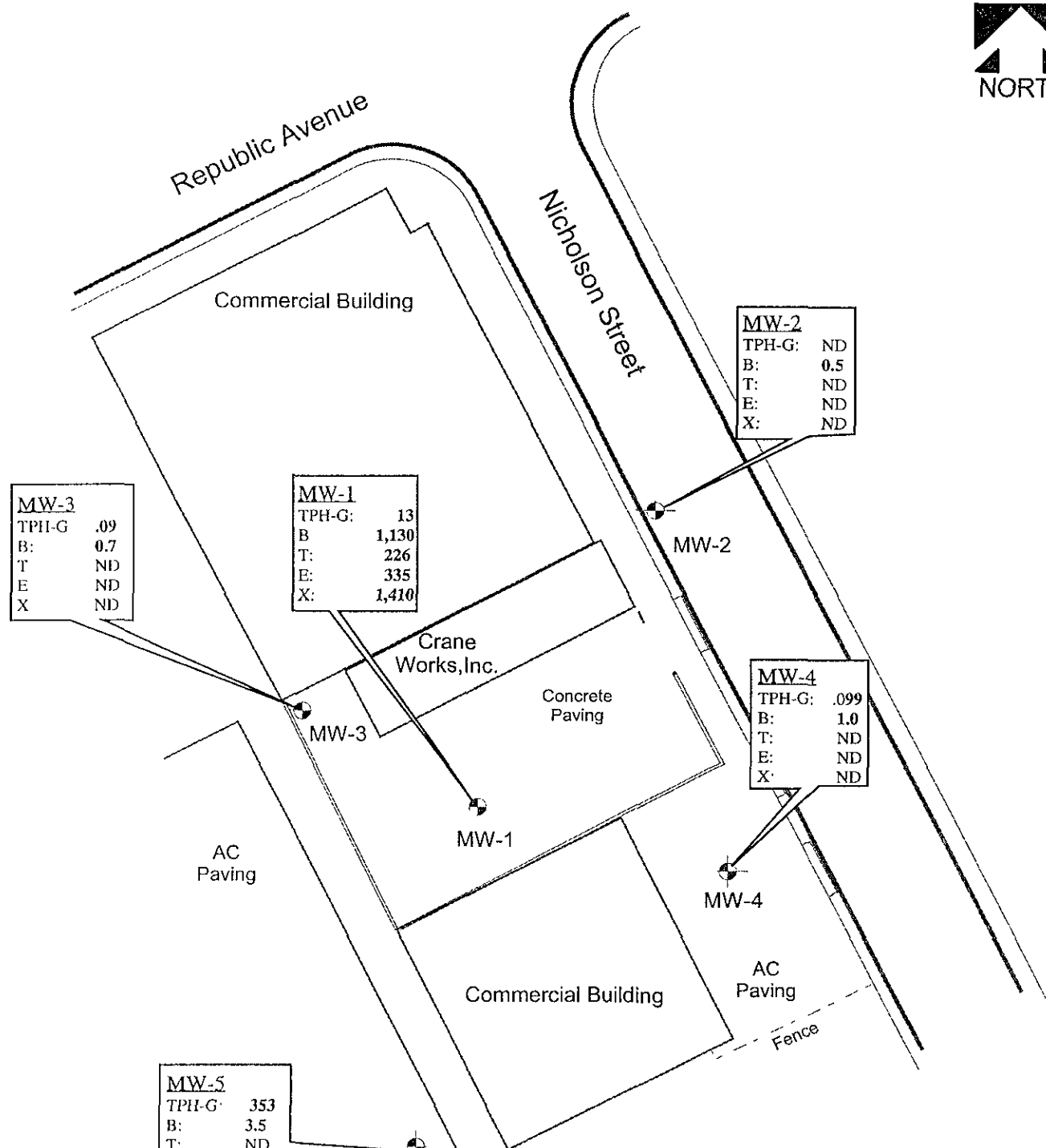
Dr By	Dale Anderson
Date:	4/19/00
Scale:	1 inch= 60 feet
Versar Project No.	4422-002

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Groundwater Contour Map

April 13, 2000
 2585 Nicholson Street
 San Leandro, California

Figure
3



Legend	
	Extraction and Observation Well Location
NOTE:	BTEX Results in Ug/L, and TPH-G Results in mg/L
TPH-G:	Total Petroleum Hydrocarbons as Gasoline
B:	Benzene
T:	Toluene
E:	Ethybenzene
X:	Total Xylenes
ND:	Not detected at or above the methods reporting limit.

Dr By: Dale Anderson
Date: 05/03/00
Scale: 1 inch= 60 feet
Versar Project No. 4422-002

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**Laboratory Analytical Results
 For Groundwater Samples
 April 13, 2000
 2585 Nicholson Street
 San Leandro, California**

**Figure
 4**

ATTACHMENT II

Tables

Table 1
Groundwater Elevation Data
2585 Nicholson Street
San Leandro, California

		Groundwater Monitoring Well					Hydraulic gradient magnitude (ft/ft)	General gradient direction
		MW-1	MW-2	MW-3	MW-4	MW-5		
Well casing elevation (feet amsl)		15.27	13.69	15.88	15.25	16.46	---	---
April 29, 1999	Depth to groundwater (feet toc)	5.33	3.76	5.88	5.40	6.64	0.001	Southeast
	Groundwater elevation (feet amsl)	9.94	9.93	10.00	9.85	9.82		
July 28, 1999	Depth to groundwater (feet toc)	5.85	4.19	6.37	5.84	7.11	0.001	Southeast
	Groundwater elevation (feet amsl)	9.42	9.50	9.51	9.41	9.35		
	Change from previous elevation	-0.52	-0.43	-0.49	-0.44	-0.47		
October 28, 1999	Depth to groundwater (feet toc)	5.45	4.06	5.79	5.60	6.68	0.002	Easterly
	Groundwater elevation (feet amsl)	9.82	9.63	10.09	9.65	9.78		
	Change from previous elevation	0.40	0.13	0.58	0.24	0.43		
January 20, 2000	Depth to groundwater (feet toc)	5.13	3.70	5.63	5.25	6.43	0.001	Easterly
	Groundwater elevation (feet amsl)	10.14	9.99	10.25	10.00	10.03		
	Change from previous elevation	0.32	0.36	0.16	0.35	0.25		
April 13, 2000	Depth to groundwater (feet toc)	4.95	3.61	5.41	5.06	6.15	0.002	Easterly
	Groundwater elevation (feet amsl)	10.32	10.08	10.47	10.19	10.31		
	Change from previous elevation	0.18	0.09	0.22	0.19	0.28		

Notes and Abbreviations:
ft/ft = feet per foot
amsl = above mean sea level
toc = top of casing

Table 2
 Analytical Results for Groundwater Samples
 2585 Nicholson Street
 San Leandro, California

Monitoring Well No	Date	Chemicals of Concern										
		TPH-G (mg/L)	TPH-D (mg/L)	TPH-MO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TPH-K (mg/L)	TPH-SS (mg/L)	Naphthalene	2-Methyl-naphthalene
MW-1	Jun-92	10	ND	NA	110	81	62	280	--	--	--	--
	Nov-92	9.8	ND	--	23	14	22	96	--	--	--	--
	Apr-93	18	.56	ND	42	47	50	190	ND	.37	--	--
	Jul-93	27	ND	ND	40	45	63	190	ND	ND	--	--
	Dec-93	7.8	3.8	ND	13	16	20	77	ND	ND	--	--
	Mar-94	280	.62	ND	970	880	620	1,700	ND	3.3	--	--
	Jun-94	8.5	ND	ND	23	13	8.5	19	ND	ND	--	--
	Sep-94	2.4	.052	ND	5.3	2.6	2.5	6	ND	ND	--	--
	Dec-94	4.8	1.3	ND	32	32	16	50	ND	1.0	--	--
	Apr-95	74	3.7	ND	320	350	350	940	ND	.57	--	--
	Sep-95	33	46	ND	140	270	260	1,100	ND	4.9	--	--
	May-99	8.1	ND	ND	1,400	31	82	360	--	--	--	--
	Jul-99	3.5	1.7	--	252	23	43	179	--	--	10	6.5
	Oct-99	4.9	--	--	270	34	<5	370	--	--	--	--
Jan-00	22.4	< 05	--	1,300	402	483	2,490	--	--	--	--	
Apr-00	13	NA	NA	1,130	226	335	1,410	--	--	--	--	
MW-2	Apr-99	ND	ND	ND	ND	ND	ND	ND	--	--	--	--
	Jul-99	< 1	< 1	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Oct-99	< 1	--	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Jan-00	.118	--	--	0.7	< 0.5	< 0.5	< 0.5	--	--	--	--
	Apr-00	< 0.5	--	--	0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
MW-3	Apr-99	ND	.54	ND	ND	ND	ND	ND	--	--	ND	ND
	Jul-99	.3	< 1	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	< 5.0	< 5.0
	Oct-99	.23	--	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Jan-00	.163	< 05	--	0.8	< 0.5	< 0.5	< 0.5	--	--	--	--
	Apr-00	.09	--	--	0.7	< 0.5	< 0.5	< 0.5	--	--	--	--
MW-4	Apr-99	.11	ND	ND	ND	ND	ND	ND	--	--	--	--
	Jul-99	.12	< 1	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Oct-99	< 1	--	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Jan-00	.106	--	--	0.9	< 0.5	< 0.5	< 0.5	--	--	--	--
	Apr-00	.099	--	--	1	< 0.5	< 0.5	< 0.5	--	--	--	--
MW-5	Apr-99	.27	ND	ND	ND	ND	ND	ND	--	--	--	--
	Jul-99	.57	< 1	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Oct-99	.54	--	--	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--
	Jan-00	.231	--	--	1.9	< 0.5	< 0.5	< 0.5	--	--	--	--
	Apr-00	.353	--	--	3.5	< 0.5	< 0.5	< 0.5	--	--	--	--

Notes and Abbreviations

TPH-G = total petroleum hydrocarbons as gasoline
 TPH-D = total petroleum hydrocarbons as diesel
 TPH-K = total petroleum hydrocarbons as kerosene
 TPH-SS = total petroleum hydrocarbons as stoddard solvent
 µg/L = micrograms per liter, equivalent to parts per billion (ppb).
 mg/L = milligrams per liter, equivalent to parts per million (ppm)
 ND = not detected at or above the methods reporting limit
 -- = not analysed

Table 3
 Intrinsic Bioremediation Indicator Analytical Results for Groundwater Samples
 2585 Nicholson Street
 San Leandro, California

Monitoring Well No.	Date	Bioremediation Indicators						
		Methane (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous (mg/L)	Alkalinity (mg/L)	Redox (mV)	D/O (mg/L)
MW-1	Jan-00	2590.0	0.27	46	--	576	-106	2.51
	Apr-00	3.1	<0.20	14	--	614	137	0.94
MW-2	Jan-00	1.5	3.04	82	--	530	-048	1.63
	Apr-00	<0.01	24	75	--	498	195	0.93
MW-3	Jan-00	13.0	1.37	45	--	346	-055	2.61
	Apr-00	0.020	3.2	20	--	304	061	0.98
MW-4	Jan-00	--	--	--	--	--	-060	1.49
	Apr-00	--	--	--	--	--	181	0.94
MW-5	Jan-00	--	--	--	--	--	-072	1.91
	Apr-00	--	--	--	--	--	116	1.48

Notes and Abbreviations:

Methane by Gas Chromatography / Mass Spectroscopy

Nitrate by EPA method 353.2

Sulfate by EPA method 375.4

Ferrous iron by EPA method 3500 FE-D

Alkalinity by EPA method 2320B

Redox - Reduction/Oxidation potential in millivolts, field measured with direct reading instrument, average of last three readings.

D/O - Dissolved Oxygen, field measured with direct reading instrument, average of last three readings.

µg/L = micrograms per liter, equivalent to parts per billion (ppb).

mg/L = milligrams per liter, equivalent to parts per million (ppm).

ND = not detected at or above the methods reporting limit.

-- = not analysed

ATTACHMENT III

Decontamination and Groundwater Monitoring Well Sampling Procedures

1.0 DECONTAMINATION PROCEDURES

The decontamination procedures for non-dedicated field equipment and well development/purging equipment are given below. These procedures are followed during all field activities.

1. Non-dedicated well development, purging, and sampling equipment is carefully pre-cleaned prior to each use, as follows:
 - a. Carefully brush off any loose foreign debris with a soft bristle brush.
 - b. Rinse the equipment thoroughly in clean water.
 - c. Wash the equipment in a non-phosphate detergent bath.
 - d. Rinse thoroughly in clean water.
 - e. Rinse thoroughly with deionized water.
 - f. Air dry in a dust-free environment.
 - g. Store in unused plastic bags or other suitable cover until use.
2. Clean disposable gloves are worn by all field personnel when handling decontaminated equipment.

2.0 COLLECTION OF SAMPLES

2.1 Groundwater Sampling

Groundwater samples are collected for laboratory analysis using the procedures given below.

1. Open the well and measure the organic vapor concentration with a flame-ionization detector (FID) or photoionization detector (PID).
2. Measure the water levels (if any) in the well using a decontaminated measuring device. All measurements must be made to the nearest 0.01 foot, and measured relative to the top of the casing. Record the depth of the water in the field notebook.

3. Inspect the disposable bailer to ensure that the bottom valve assembly is working correctly.
4. Begin purging the well by inserting a bailer into the PVC monitoring well casing and carefully lower it into the well. Take care to avoid agitating and aerating the fluid column in the well.
5. Slowly withdraw the bailer and transfer the water samples to a sampling containers.
6. Measure the temperature, pH, conductivity, and turbidity. Record these and all subsequent measurements in the field notebook.
7. Continue purging the well (a minimum of three well volumes) until the temperature, pH, conductivity, and turbidity have stabilized, or the well is dry.
8. When the water has recovered to 80 percent of the original level, carefully lower a new disposable bailer into the well and recover groundwater samples.
9. Fill the appropriate sample containers by releasing water from the bailer via the bottom emptying device with a minimum of agitation. The most volatile parameters are collected first, proceeding to the least volatile parameters.
10. Place the purge water in a DOT-approved 55-gallon drums.

3.0 ANALYSIS OF SAMPLES

Samples are submitted to a California state-certified laboratory for analysis.

4.0 SAMPLE HANDLING

4.1 Sample Containers, Preservation, and Holding Times

All samples are collected, placed in containers, preserved, and analyzed within the time constraints with applicable local, provincial, and federal procedures. All sample containers are precleaned in accordance with prescribed EPA methods. A custody seal is placed around all sample container lids to prevent leaks and unauthorized tampering with individual samples following collection and prior to the time of analysis.

4.2 Sample Tracking and Management

All samples are tracked using a standard chain-of-custody form. The chain of custody record includes the following information:

1. Sample number
2. Signature of collector
3. Date and time of collection
4. Sample collection location
5. Sample type
6. Signature of persons involved in the chain-of-possession
7. Inclusive dates of possession
8. Analytical parameters
9. Pertinent field observations

The custody record is completed using waterproof ink. Corrections are made by drawing a line through, initialing the error, and then entering the correct information.

Custody of the samples begins at the time of sample collection and are maintained by the sampling team supervisor until samples are relinquished for shipment to the laboratory, or until samples are hand-delivered to the designated laboratory sample custodian. Partial sample sets being accumulated for hand-delivery to the laboratory are stored in coolers with chain-of-custody records sealed in plastic bags and placed in the cooler with the sample sets.

ATTACHMENT IV

Monitoring Well Purge Tables

MONITORING WELL PURGE TABLE

Project Number: 4422-002	Site Name: Bank of America-San Leandro
Well Number: MW-1	Date(s) Purged: 4/13/00
OVM - Ambient: NR	Purge Method: Centrifugal Pump
OVM - Vault: NR	Purge Rate: 3.16 gpm
OVM - Casing: NR	Date & Time Sampled: 4/13/00 1550
Water Level - Initial: 4.95 1246	Purged & Sampled: Dale Anderson
Water Level - Final: 5.4	Sampling Method: Disposable Bailer
Well Depth: 18.00 feet	Free Product: 0
Well Diameter: 6 inch	Sheen: 0
Well Casing Volume: 19.6	Odor: STRONG HYDROCARBON

Time	Purge Water Removed (gal)	Temperature (degrees Celcius)	pH	Electrical Conductivity (umhos)	Oxidation - Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
1518	5	15.1	6.5	596	142	2.60	Low
1521	10	17.6	6.4	503	177	1.09	Low
1525	20	17.9	6.4	522	163	1.43	"
1527	30	17.9	6.4	604	158	.88	"
1529	40	17.9	6.4	674	155	1.03	"
1531	45	18.0	6.5	660	144	.95	"
1533	50	18.1	6.5	672	144	.94	"
1535	55	18.0	6.5	656	137	1.15	
1537	60	18.1	6.5	676	131	.74	
1550	Sample						

12
04/13/00

MONITORING WELL PURGE TABLE

Project Number: 4422-002				Site Name: Bank of America-San Leandro			
Well Number: MW-3				Date(s) Purged: 4/13/00			
OVM - Ambient: NR				Purge Method: Dedicated Disposable Bailer			
OVM - Vault: NR				Purge Rate: 124 g/m			
OVM - Casing: NR				Date & Time Sampled: 4/13/00 1445			
Water Level - Initial: 5.41 1242				Purged & Sampled: Dale Anderson			
Water Level - Final: 5.42 @ 1441				Sampling Method: Dedicated Disposable Bailer			
Well Depth: 14.90 feet				Free Product: <input checked="" type="checkbox"/>			
Well Diameter: 2 inch				Sheen: <input checked="" type="checkbox"/>			
Well Casing Volume: 1.5				Odor: <input checked="" type="checkbox"/>			
Time	Purge Water Removed (gal)	Temperature (degrees Celcius)	pH	Electrical Conductivity (umhos)	Oxidation - Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
1421	0.5	16.3	6.8	275	062	1.02	clear
1422	1	16.9	6.8	273	038	0.92	LOW
1426	1.5	16.7	6.7	300	042	0.93	MOD
1428	2.0	16.8	6.8	349	045	0.83	"
1430	2.5	16.7	6.8	342	050	1.15	"
1432	3.0	17.0	6.8	381	052	0.85	"
1435	3.5	16.9	6.9	380	059	1.06	"
1437	4.0	17.1	6.9	393	061	0.82	LOW
1440	4.5	16.9	6.9	378	063	1.06	"
1445	Sample	17.0	6.9	381	093	2.53	"

MONITORING WELL PURGE TABLE

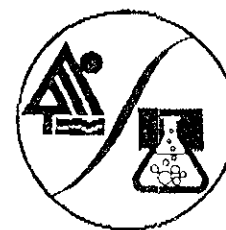
Project Number: 4422-002				Site Name: Bank of America-San Leandro			
Well Number: MW-5				Date(s) Purged: 4/13/00			
OVM - Ambient: NR				Purge Method: Dedicated Disposable Bailer			
OVM - Vault: NR				Purge Rate: .25 gpm			
OVM - Casing: NR				Date & Time Sampled: 4/13/00 1205			
Water Level - Initial: 6.15 @ 1133				Purged & Sampled: Dale Anderson			
Water Level - Final: 6.20 @ 1159				Sampling Method: Dedicated Disposable Bailer			
Well Depth: 15.55 feet				Free Product: <input checked="" type="checkbox"/>			
Well Diameter: 2 inch				Sheen: <input checked="" type="checkbox"/>			
Well Casing Volume: 1.5				Odor: <input checked="" type="checkbox"/>			
Time	Purge Water Removed (gal)	Temperature (degrees Celcius)	pH	Electrical Conductivity (µmhos)	Oxidation - Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
1140	1.25	18.8	6.3	913	165	1.79	Low
1143	1.0	17.9	6.3	891	122	—	"
1146	1.5	17.7	6.4	890	112	2.01	"
1148	2.0	17.7	6.3	894	107	1.84	"
1150	2.5	17.7	6.3	894	105	1.76	"
1151	3.0	17.7	6.3	531	108	1.83	"
1154	3.5	17.9	6.3	649	117	1.48	"
1156	4.0	17.8	6.3	633	118	1.52	"
1158	4.5	17.9	6.3	887	113	1.44	"
1205	Sample	18.3	6.4	893	137	2.58	"

ATTACHMENT V

Laboratory Analytical Reports and Chain-of-Custody Documentation

EXCELCHEM ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#. (916) 773-3664 Fax#: (916) 773-4784



ANALYSIS REPORT

Attention: Dale Anderson
Versar
7844 Madison Avenue, Suite 167
Fair Oaks, CA 95628
Project: Bank of America WT San Leandro/4422-002
Method: EPA 602/8015m

Date Sampled: 04/13/00
Date Received: 04/13/00
BTEX/TPHg Analyzed: 04/17/00
Matrix: Water
Units: µg/L

Client Sample I.D.	MW 5		MW 4		MW 3		MW 2		MW 1	
LAB NO	W0400222		W0400223		W0400224		W0400225		W0400226	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.5	3.5	0.5	1.0	0.5	0.7	0.5	0.5	10	1130
Toluene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	10	226
Ethylbenzene	0.5	ND	0.5	ND	0.5	ND	0.5	ND	10	335
Total Xylenes	0.5	ND	0.5	ND	0.5	ND	0.5	ND	10	1410
TPH as Gasoline	50	353	50	99	50	90	50	ND*	1000	13000

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	106	107
Toluene	108	109
Ethylbenzene	108	109
Total Xylenes	109	109

QA/QC Analyzed: 04/17/00

*The sample chromatogram does not match our gasoline standard chromatogram. Value is due mainly to one or two single peaks integrated within the gasoline range. The result is ND

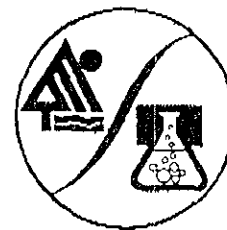
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

R/L = Reporting Limit


Laboratory Representative

04/28/00
Date Reported

EXCELCHEM ENVIRONMENTAL LABS



500 Giuseppe Court, Suite 9
Roseville, CA 95678

Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dale Anderson
Versar
7844 Madison Avenue, Suite 167
Fair Oaks, CA 95628
Project: Bank of America WT San Leandro/4422-002
Method: EPA 3810

Date Sampled: 04/13/00
Date Received: 04/13/00
Methane Analyzed: 04/18/00
Matrix: Water
Units: $\mu\text{G/ml}$

Client Sample I.D.	MW 3		MW 2		MW 1	
LAB NO	W0400224		W0400225		W0400226	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Methane	0.010	0.020	0.010	ND	0.010	3.1

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit
R/L = Reporting Limit

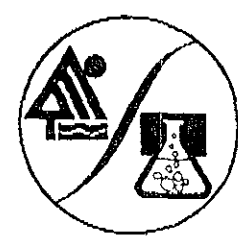


Laboratory Representative

04/28/00
Date Reported

EXCELCHEM ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784



ANALYSIS REPORT

Attention: Dale Anderson
Versar
7844 Madison Avenue, Suite 167
Fair Oaks, CA 95628

Date Sampled: 04/13/00
Date Received: 04/13/00
Matrix: Water

Project: Bank of America WT San Leandro/4422-002

Method: EPA 375.4 Units: mg/L SO₄²⁻ Date Analyzed: 04/18/00

Client Sample I.D.	MW 3		MW 2		MW 1	
LAB NO.	W0400224		W0400225		W0400226	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Sulfate	5	20	5	75	5	14

QA/QC %RECOVERY		
	LCS	LCSD
Sulfate	95	105

QA/QC Analyzed: 04/18/00

Method: EPA 2320B Units: mg/L Date Analyzed: 04/19/00

Client Sample I.D.	MW 3		MW 2		MW 1	
LAB NO.	W0400224		W0400225		W0400226	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Alkalinity	50	304	50	498	50	614

QA/QC %RECOVERY		
	LCS	LCSD
Alkalinity	102	106

QA/QC Analyzed: 04/19/00

ND = Not detected Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit


Laboratory Representative

04/28/00
Date Reported

PROJECT NO.		PROJECT NAME					PARAMETERS					INDUSTRIAL HYGIENE SAMPLE	Y
4422-002		BANK of AMERICA NT SAN LEANDRO					NO. OF CONTAINERS PH-CALIBER METHANE SULFIDES/37°C ALKALINITY/37°C						
SAMPLERS: (Signature) Dale Anderson					(Printed) DALE ANDERSON							REMARKS	
FIELD SAMPLE NUMBER	DATE 2000	TIME	COMP.	GRAB	STATION LOCATION								
MW 5	4/13	1205		X	W0400222	2	X						
MW 4		1320			W0400223	2	X						
MW 3		1445			W0400224	6	X	X	X	X			
MW 2		1400			W0400225	6	X						
MW 1		1500			W0400226	6	X						HYDRO ODOR
Relinquished by: (Signature) Dale Anderson			Date / Time 4/14/00 9:45		Received by: (Signature)			Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
(Printed) DALE ANDERSON					(Printed)			(Printed)				(Printed)	
Relinquished by: (Signature)			Date / Time		Received for Laboratory by: (Signature) shannon beale			Date / Time 4/13/00 7:45		Remarks STD JAT			
(Printed)					(Printed) shannon beale								

FROM 4-20-2002 4:35AM

CLS Labs

Versar, Inc.
7844 Madison Avenue STE 167
Fair Oaks, CA 95628

04/27/2000

Attention: Dale Anderson

Reference: Analytical Results

Project Name: Bank of America NT -San
Leandro
Project No.: 4422-002
Date Received: 04/13/2000
Chain Of Custody: NO NUMBER

CLS ID No.: R8880
CLS Job No.: 828880

The following analyses were performed on the above referenced project:

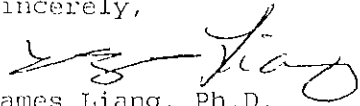
<u>No. of Samples</u>	<u>Turnaround Time</u>	<u>Analysis Description</u>
3	10 Days	Nitrite, Nitrate and Nitrite-N EPA 353.3

These samples were received by CLS Labs in a chilled, intact state and accompanied by a valid chain of custody document.

Calibrations for analytical testing have been performed in accordance to and pass the EPA's criteria for acceptability.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,


James Liang, Ph.D.
Laboratory Director

CLS Labs

Analysis Report: Nitrate, EPA Method 353.3

Client: Versar, Inc.
7844 Madison Avenue STE 167
Fair Oaks, CA 95628

Project No.: 4422-002
Contact: Dale Anderson
Phone: (916)962-1612

Project: Bank of America NT -
San Leandro

Lab Contact: James Liang
Lab ID No.: R8880-1A
Job No.: 828880
COC Log No.: NO NUMBER
Batch No.: WY2K0414A
Instrument ID: UV002
Analyst ID: PONGC
Matrix: WATER

Date Sampled: 04/13/00
Date Received: 04/13/00
Date Extracted: N/A
Date Analyzed: 04/14/00
Date Reported: 04/21/00
Client ID No.: MW3

Sample: MW3

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)	Dilution (factor)
Nitrate (as NO3)	5945	3.2	1.0	5.0

ND = Not detected at or above indicated Reporting Limit

CLS Labs

Analysis Report: Nitrate, EPA Method 353.3

Client: Versar, Inc.
7844 Madison Avenue STE 167
Fair Oaks, CA 95628

Project No.: 4422-002
Contact: Dale Anderson
Phone: (916)962-1612

Project: Bank of America NT -
San Leandro

Lab Contact: James Liang
Lab ID No.: R8880-2A
Job No.: 828880
COC Log No.: NO NUMBER
Batch No.: WY2K0414A
Instrument ID: UV002
Analyst ID: PONGC
Matrix: WATER

Date Sampled: 04/13/00
Date Received: 04/13/00
Date Extracted: N/A
Date Analyzed: 04/14/00
Date Reported: 04/21/00
Client ID No.: MW2

Sample: MW2

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)	Dilution (factor)
Nitrate (as NO3)	5945	24	2.0	10

ND = Not detected at or above indicated Reporting Limit

CLS Labs

Analysis Report: Nitrate, EPA Method 353.3

Client: Versar, Inc.
7844 Madison Avenue STE 167
Fair Oaks, CA 95628

Project No.: 4422-002
Contact: Dale Anderson
Phone: (916)962-1612

Project: Bank of America NT -
San Leandro

Lab Contact: James Liang
Lab ID No.: R8880-3A
Job No.: 828880
COC Log No.: NO NUMBER
Batch No.: WY2K0414A
Instrument ID: UV002
Analyst ID: PONGC
Matrix: WATER

Date Sampled: 04/13/00
Date Received: 04/13/00
Date Extracted: N/A
Date Analyzed: 04/14/00
Date Reported: 04/21/00
Client ID No.: MW1

Sample: MW1

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)	Dilution (factor)
Nitrate (as NO3)	5945	ND	0.20	1.0

ND = Not detected at or above indicated Reporting Limit

PROJECT NO. 4422-002		PROJECT NAME BANK OF AMERICA NT - SAN LEANDRO					PARAMETERS					INDUSTRIAL HYGIENE SAMPLE	Y <input checked="" type="checkbox"/>					
SAMPLERS: (Signature) Dale Anderson				(Printed) DALE ANDERSON				NO. OF CONTAINERS NITRATE 332					REMARKS					
FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION													
MW 3	4/13	1445		X											WATER			
MW 2	↓	1400		↓											↓			
MW 1	↓	1550		↓														
Relinquished by: (Signature) Dale Anderson			Date / Time 4/13/00 1855		Received by: (Signature)			Relinquished by: (Signature)		Date / Time	Received by: (Signature)							
(Printed) DALE ANDERSON					(Printed)			(Printed)			(Printed)							
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks										
(Printed)				(Printed)		4-13 1855		STD TAT										