EXXON COMPANY, U.S.A.

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ENVIRONMENTAL ENGINEERING

G. D. GIBSON
SENIOR ENVIRONMENTAL ENGINEER

February 5, 1991

Exxon RAS 7-3399
2991 Hopyard Road
Pleasanton, California

Mr. Richard Hiett
San Francisco Bay Regional Water Quality Control Board
1800 Harrison Street, Suite 700
Oakland, California 94612

Dear Mr. Hiett:

Attached for your review is the Letter Progress Report of Ground-Water Monitoring at the above referenced Exxon Company, U.S.A. facility in the City of Pleasanton. This report, by Applied GeoSystems of Fremont, California, presents the results of the monthly monitoring events conducted in July and August, 1990.

Please contact me at (415) 246-8768 if you have any questions or concerns about this report. Thank you.

Sincerely,

Gary D. Gibson

GDG:hs
0107E
Attachment

c - w/attachment:
Mr. S. Cusenza - City of Pleasanton Public Works Department
Mr. L. Feldman - San Francisco Bay Region Water Quality Control Board
Mr. J. Killingstad - Alameda County Flood Control District Zone 7
Mr. R. Meuller - City of Pleasanton Fire Department

w/o attachment:
Ms. M. D. Baca
Mr. D. J. Bertoch
Mr. P. J. Brininstool
Mr. J. R. Hastings
Mr. R. C. Witham - Applied GeoSystems

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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LETTER PROGRESS REPORT ON GROUND-WATER MONITORING AND REMEDIATION ACTIVITIES at Exxon Station No. 7-3399 2991 Hopyard Road Pleasanton, California

AGS Job No. 18034-8

Applied GeoSystems 43255 Mission Boulevard, Fremont, CA 94539 (415) 651-1906

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January 16, 1991
AGS 18034-8

Mr. Gary Gibson
Exxon Company, U.S.A.
P.O. Box 4032
Concord, California 94520

Subject: Letter Progress Report on Fourth Quarter 1990 Ground-Water Monitoring and Remediation Activities, at Exxon Station No. 7-3399, 2991 Hopyard Road, Pleasanton, California

Mr. Gibson:

This report presents the results of fourth quarter 1990 ground-water monitoring and sampling and an update of remediation activities, at Exxon Service Station No. 7-3399. The Exxon station is located at the intersection of Hopyard Road and Valley Avenue in Pleasanton, California. The monitoring program included depth-to-water measurements and subjective ground-water evaluations of the monitoring wells at the site.

Site Setting and Background

The original service station on the site was demolished in September 1988, and new station facilities were constructed between September 1988 and February 1989. The fuel underground storage tanks (USTs) in the southeast part of the site were removed in July 1988. The current station features three new USTs containing respectively unleaded, premium unleaded, and regular leaded gasoline; and a waste oil UST (Plate P-1).

Nine ground-water monitoring wells exist on the site (Plate P-2). Seven of the nine wells, designated MW-1, MW-4, MW-5s, MW-7, MW-9, MW-10, and MW-11, are screened in the uppermost aquifer below the site. The remaining two wells, MW-5d and MW-8, are screened in the underlying second and third aquifers, respectively.

A ground-water recovery system in operation since 1988 pumped from well MW-7, through an oil-water separator, and then into the sanitary sewer under a permit from the Dublin-San Ramon Services District.

MONITORING

Field Activities

On December 27, 1990, AGS personnel measured depth-to-water, subjectively evaluated ground-water in each well, and purged and sampled wells MW-4, MW-5d, MW-5s, and MW-8 for laboratory analyses as part of the quarterly ground-water monitoring program. Wells MW-7, MW-10, and MW-11, which are included in the quarterly sampling program, were not sampled because these wells contained insufficient water for sampling. The field activities were performed using procedures described in Appendix A.

Results of Ground-Water Monitoring

Between September and December 1990, ground-water levels in the wells showed only minor fluctuations (Table 1). No floating product or sheen was observed on water in the wells. Cumulative results of depth to water measurements and subjective evaluations are presented in Table 2.

Due to the low water levels measured in December 1990 (Table 1), resulting in anomalous water levels in the upper aquifer, ground-water elevation maps were not constructed. Previous data suggest that the ground-water flow direction is generally southward and the hydraulic gradient below much of the site is very shallow.

Laboratory Methods and Results of Ground-Water Sampling

The ground-water samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by Environmental Protection Agency (EPA) modified Method 8015, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 602. The analyses were performed by Applied Analytical laboratories (Hazardous Waste Testing Laboratory Certificate 1211), Fremont, California.

The laboratory analyses indicate no detectable TPHg and BTEX in the ground-water samples from wells MW-4, MW-5s, MW-5d, and MW-8 (Table 3), except for trace xylenes (0.0006 ppm) in MW-8. Chain of Custody Records and certified analysis reports are enclosed (Appendix A).

REMEDIATION

Ground-Water Recovery

During this monitoring period, ground-water recovery was not undertaken because of insufficient water in the uppermost aquifer to pump. Recovery activities will resume when the ground water rises to a sufficient level for pumping.

Soil-Vapor Extraction System

A 100 cubic feet per minute vacuum pump and catalytic oxidizer were installed at the site in November to extract and treat soil vapors. The intent of the vapor extraction program is to remove vapors from the sand and gravel of the uppermost aquifer before the water level in this aquifer rises, and reduce potential future impact to the ground water. The vacuum system is connected to six wells; VR-1, installed in the backfill material of the former UST pit; VR-2, MW-1, and MW-9, installed in sand and gravel in the uppermost aquifer; and VR-3 and VR-4, installed in the unsaturated silty clay overlying the uppermost aquifer.

The vapor extraction system was permitted by the Bay Area Air Quality Management District under Authority to Construct No. 5125, dated August 2, 1990, and permit to operate, dated January 4, 1991. Copies of these authorizations are in Appendix A. After start up testing in late November, the system began operating on December 7, 1990. The system has been operational, and various influent and effluent samples have been collected and analyzed to test the operational efficiency of the system. On November 30, December 11, 14, 28, 1990, January 4, and 14, 1991, AGS personnel collected influent samples for laboratory analysis. In addition, on December 15, 17, and 28, 1990, effluent samples also were collected for laboratory testing. Sampling was performed using procedures described in Appendix A. Chain of Custody Records and certified analysis reports are also enclosed (Appendix A).

Laboratory Methods and results of Vapor Sampling

Influent and effluent vapor samples were analyzed for TPHg and BTEX by Modified Method CA-ADDL004. The sample collected in November 1990 was analyzed by Trace Analysis Laboratory, Inc., of Hayward, California, and vapor samples collected in December 1990 and January 1991, were analyzed by Chromalab, Inc., (Certification No. E694) of San Ramon, California. Results of the influent and effluent vapor samples are presented in Table 4.

Between November 30 and December 28, 1990, the six vapor extraction (recovery) wells were set in an open mode to utilize venting during an initial period of system adjustment. The laboratory results show decreasing concentrations of TPHg and BTEX collected from influent vapor samples collected between the above-referenced dates. Also, effluent testing indicate no detectable TPHg and BTEX for samples collected during this time span. To remove vapors from the sand and gravel of the uppermost aquifer, vapor wells in the unsaturated silty clay were closed, while vapor wells in the uppermost aquifer were opened. This was conducted on December 28, 1990, and on January 4, 1991, vapor samples were collected and laboratory tested. Results from January 4 show influent TPHg concentrations of 0.94 ppm and BTEX ranging from 0.0005 to 0.013 ppm. On January 4, 1991, vapor wells in the unsaturated silty clay were opened and the vapor wells in the sand and gravel were closed. On January 14, 1991, influent vapor sampling was conducted once the remediation system was again operable after a temporary shut down. Laboratory results show 1.2 ppm TPHg and BTEX ranging from 0.0009 to 0.0039 ppm, indicating an increase since the January 4, 1991, results. This increase may be a result of vapor equilibration during the system shut down.

Please call if you have questions.

Sincerely,
Applied GeoSystems

Keith M. McVicker
Project Geologist

Joan E. Tiernan
Registered Civil Engineer
No. 044600

Enclosures:

Table 1, Ground-Water Elevation Data, Uppermost Aquifer
Table 2, Cumulative Results of Subjective Evaluations
Table 3, Results of Ground-Water Samples
Table 4, Results of Influent and Effluent Vapor Samples
Plate P-1, Site Vicinity Map
Plate P-2, Generalized Site Plan

Appendix A:

Field Procedures
Chain of Custody Records and Laboratory Analysis Reports
Authority to Construct No. 5145
Permit to Operate No. 5145

TABLE 1
GROUND-WATER ELEVATION DATA
UPPERMOST AQUIFER

Well No.	Casing Elevation	Depth to Ground Water	Ground-Water Elevation
September 28, 1990			
MW-1	321.44	53.40	268.04
MW-4	321.56	53.57	267.99
MW-5s	321.64	53.55	268.09
MW-7	321.27	--	--
MW-9	321.44	DRY	NA
MW-10	322.99	57.99	265.00
MW-11	321.71	53.62	268.09
December 27, 1990			
MW-4	321.56	53.68	267.88
MW-5s	321.64	53.61	268.03
MW-7	321.27	--	--
MW-10	322.99	58.08	264.91
MW-11	321.71	53.63	268.08

Elevation is in feet above mean sea level.
Depth to ground water is in feet below the top of the casing.
-- = water level not measured.
NA = Not applicable.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 1 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-1	04/06/88	36.34	None	None
	04/08/88	36.29	None	None
	04/19/88	36.36	None	None
	06/06/88	38.16	None	None
	06/23/88	38.71	None	None
	06/28/88	39.16	--	--
	07/06/88	39.73	None	None
	07/13/88	40.22	None	None
	08/12/88	Well buried under excavated soil		
	08/26/88	41.90	--	--
	09/07/88	42.27	None	None
	12/07/88	43.94	None	None
	12/19/88	43.70	None	None
	02/09/89	42.53	--	--
	03/08/89	41.96	None	None
	04/03/89	41.59	--	--
	04/26/89	41.67	--	--
	06/30/89	43.79	None	None
	07/17/89	44.74	None	None
	07/18/89	44.76	--	--
	07/19/89	44.82	--	--
	07/20/89	44.85	None	None
	07/21/89	44.95	--	--
	07/26/89	45.42	None	None
	08/02/89	--	--	--
	08/03/89	46.18	--	--
	08/17/89	47.12	--	--
	09/13/89	49.08	None	None
	11/28/89	50.21	None	None
	01/09/90	49.31	None	None
	01/26/90	49.29	None	None
	02/23/90	49.02#	None	None
	02/23/90	49.02	None	None
	03/26/90	48.71#	None	None
	03/26/90	48.70	None	None

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 2 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-1	04/18/90	48.79	None	None
	05/17/90	49.40	None	None
	06/11/90	50.83	None	None
	07/30/90	52.17	None	None
	08/27/90	53.44	None	None
	09/28/90	53.40	None	None
	12/27/90	--	--	--
MW-2	04/02/90	--	3.0	Heavy
	04/04/90	--	18.0	Heavy
	40/05/88	--	18.0	Heavy
	04/06/88	39.31	38.4	Heavy
	04/08/88	--*	--*	--*
	04/19/88	38.90	29.76**	Heavy
	06/06/88	38.78	3.12	Heavy
	06/23/88	39.23	1.50	Heavy
	06/28/88	39.72	--	--
	07/06/88	40.31	None	Slight
	07/12/88	Well destroyed due to excavation (old pit)		
MW-3	04/06/88	37.19	None	None
	04/08/88	37.14	None	None
	04/19/88	37.22	None	None
	06/06/88	39.02	None	None
	06/23/88	39.58	None	None
	06/28/88	40.04	--	--
	07/06/88	40.60	None	None
	07/13/88	41.09	None	None
	08/12/88	Well buried under excavated soil		
	08/26/88	42.77	--	--
	08/29/88	Well destroyed due to excavation (new pit)		

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 3 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-4	04/08/88	36.41	None	None
	04/19/88	36.51	None	None
	06/06/88	38.26	None	None
	06/23/88	38.83	None	None
	06/28/88	39.28	--	--
	07/06/88	39.85	None	None
	07/13/88	40.31	None	None
	08/12/88	Well buried under excavated soil		
	08/26/88	42.01	--	--
	09/07/88	Not accessible due to construction		
	12/07/88	Not accessible due to construction		
	12/19/88	43.83	None	None
	02/09/89	42.67	--	--
	03/08/89	42.11	None	None
	04/03/89	41.73	--	--
	04/26/89	41.79	--	--
	06/30/89	43.88	None	None
	07/17/89	44.85	None	None
	07/18/89	44.88	--	--
	07/19/89	44.92	--	--
	07/20/89	44.98	None	None
	07/21/89	45.04	--	--
	07/26/89	45.50	None	None
	08/02/89	--	--	--
	08/03/89	46.28	--	--
	08/17/89	47.22	--	--
	09/13/89	49.19	None	None
	11/28/89	50.34	None	None
	01/09/90	49.47	None	None
	01/26/90	49.36	None	None
	02/23/90	49.18#	None	None
	02/23/90	49.15	None	None
	03/26/90	48.84#	None	None
	03/26/90	48.83	None	None
	04/18/90	48.90	None	None

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 4 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-4	05/17/90	50.03	None	None
	06/11/90	50.98	None	None
	07/30/90	53.57	None	None
	08/27/90	53.61	None	None
	09/28/90	53.57	None	None
	12/27/90	53.68	None	None
B-4	04/02/88	--	None	None
MW-5d	05/25/88	38.55	None	None
	06/06/88	38.90	None	None
	06/23/88	39.56	None	None
	06/28/88	40.23	--	--
	07/06/88	40.69	None	None
	07/13/88	41.22	None	None
	08/12/88	42.34	--	--
	08/26/88	42.60	--	--
	09/07/88	42.99	--	--
	12/07/88	44.58	None	None
	02/09/89	Casing head damaged by construction		
	03/08/89	Casing head cut to lower elevation		
		42.49	None	None
	04/03/89	42.21	--	--
	04/26/89	42.36	--	--
	06/30/89	44.79	None	None
	07/17/89	45.73	None	None
	07/18/89	45.75	--	--
	07/19/89	44.89	--	--
	07/20/89	46.02	None	None
	07/21/89	46.18	--	--
	07/26/89	46.83	None	None
	08/02/89	--	--	--
	08/03/89	47.67	--	--
	08/17/89	48.27	--	--
	09/13/89	50.60	None	None
	11/28/89	51.16	None	None
	01/09/90	50.42	None	None
	01/26/90	50.10	None	None

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 5 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-5d	02/23/90	50.08	None	None
	03/26/90	49.80#	None	None
	03/26/90	49.77	None	None
	04/18/90	49.80	None	None
	05/17/90	51.32	None	None
	06/11/90	52.10	None	None
	07/30/90	53.47	None	None
	08/27/90	58.24	None	None
	09/28/90	60.70	None	None
	12/27/90	62.52	None	None
MW-5s	05/25/88	38.46	None	None
	06/06/88	38.86	None	None
	06/23/88	39.52	None	None
	06/28/88	39.84	--	--
	07/06/88	40.45	None	None
	07/13/88	40.90	None	None
	07/22/88	41.30	None	None
	08/05/88	23.84▼	None	None
	08/12/88	42.21	--	--
	08/26/88	42.55	--	--
	09/07/88	42.94	None	None
	12/07/88	44.67	None	None
	02/09/89	43.19	--	--
	03/08/89	Casing head cut to lower elevation		
		42.11	None	None
	04/26/89	41.84	--	--
	06/30/89	43.95	None	None
	07/17/89	44.91	None	None
	07/18/89	44.93	--	--
	07/19/89	44.98	--	--
	07/20/89	45.02	None	None
	07/21/89	45.10	--	--
	07/26/89	45.57	None	None
	08/02/89	--	--	--
	08/03/89	46.31	--	--
	08/17/89	47.25	--	--
	09/13/89	49.22	None	None

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 6 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-5s	11/28/89	50.39	None	None
	01/09/90	49.51	None	None
	01/26/90	49.40	None	None
	02/23/90	49.20#	None	None
	02/23/90	49.20	None	None
	03/26/90	48.89#	None	None
	03/26/90	48.88	None	None
	04/18/90	48.95	None	None
	05/17/90	50.06	None	None
	06/11/90	50.98	None	None
	07/30/90	53.40	None	None
	08/27/90	53.60	None	None
	09/28/90	53.55	None	None
	12/27/90	53.61	None	None
MW-6	05/11/88	37.71	None	None
	06/06/88	38.70	None	None
	06/23/88	39.23	None	None
	06/28/88	39.74	None	None
	07/13/88	40.78	None	None
	08/05/88	41.72	None	None
	08/12/88	42.14	--	--
	08/17/88	Well buried under excavated soil		
	08/26/88	42.51	--	--
	09/07/88	42.85	None	None
	10/24/88	Well destroyed for station construction		
MW-7	07/13/88	40.50	None	None
	07/22/88	41.85#	None##	None##
	08/05/88	41.45#	None##	None##
	08/12/88	42.69	--	--
	09/07/88	42.60	--	--
	12/07/88	Not accessible		
	01/17/89	43.20	--	--
	02/09/89	Not accessible, pump equipment in well		

See notes on page 8 of 8.

TABLE 2
UMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 7 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-7	10/12/89	49.93	None	None
	11/28/89	57.61#	--	--
	01/09/90	57.57#	--	--
	01/26/90	57.54#	None	None
	01/26/90	49.08	None	None
	02/23/90	55.26#	None	None
	02/23/90	48.93	None	None
	03/26/90	57.52#	None	None
	03/26/90	48.60	None	None
	04/18/90	57.55#	None	None
	05/17/90	57.40#	None	None
	06/11/90	50.68	None	None
	07/30/90	--	None	None
	08/27/90	53.05	None	None
	09/28/90	--	NA	NA
	12/27/90	--	NA	NA
MW-8	10/01/89	53.88	None	None
	11/28/89	53.74	None	None
	01/09/90	57.90	None	None
	01/26/90	53.57	None	None
	02/23/90	52.16	None	None
	03/26/90	52.80#	None	None
	04/18/90	51.60	None	None
	05/17/90	58.21	None	None
	06/11/90	58.65	None	None
	07/30/90	64.33	None	None
	08/27/90	70.41	None	None
	09/28/90	71.93	None	None
	12/27/90	66.60	None	None
MW-9	10/12/89	50.24	None	None
	11/28/89	50.59	1.0	Heavy
	12/01/89	50.32	0.25	Heavy
	12/07/89	50.13	1.92	Heavy
	12/13/89	49.91	None	Slight
	12/20/89	49.78	None	Slight
	01/02/90	--	None	Slight
	01/09/90	49.39	None	Slight
	01/26/90	49.30	None	None

See notes on page 8 of 8.

TABLE 2
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
(page 8 of 8)

Well/Boring	Date	Depth to Water (ft)	Floating Product (in)	Sheen
MW-9	02/23/90	49.06#	None	None
	02/23/90	49.05	None	None
	03/26/90	48.75#	None	None
	03/26/90	48.73	None	Very Slight
MW-10	04/18/90	48.81	None	Slight
	05/17/90	49.96	None	Slight
	06/11/90	51.58	4.5	--
	07/30/90	Dry	--	--
	08/27/90	Dry	--	--
	09/28/90	Dry	--	--
	12/27/90	58.08	None	None
MW-11	11/10/89	50.64	None	None
	11/28/89	50.51	None	Very Slight
	12/20/89	51.47	None	None
	01/09/90	49.68	None	None
	01/26/90	49.55	None	None
	02/23/90	49.37#	None	None
	02/23/90	49.35	None	None
	03/26/90	49.03#	None	None
	03/26/90	49.03	None	None
	04/18/90	49.12	None	None
	05/17/90	50.30	None	None
	06/11/90	51.16	None	None
	07/30/90	53.50	None	None
	08/27/90	53.65	None	None
	09/28/90	53.62	None	None
	12/27/90	53.63	None	None

Depth to water is in feet below top of casing.
Thickness of floating product is in inches.
-- = Not measured
* = Not measured because of installed product-skimmer pump
** = Thickness of floating product after the well was allowed to recharge for approximately 3 hours.
▼ = Anomalous water level possibly due to recharge from a perched water zone.
= Pumping-water level.
= Water inspected in oil-water separator tank.

Applied GeoSystems

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 1 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-1								
4/02/88	W-38-MW1	<0.0005	0.0017	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-40-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-42-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/07/88	W-43-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/08/89	W-43-MW1	0.0016	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/30/89	W-44-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-45-MW1	<0.0005	<0.0005	<0.0005	<0.0005	0.023	--	--
7/20/89	W-45-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-46-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-46-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-50-MW1	0.039	0.00060	<0.00050	0.0051	0.22	--	--
12/20/89	W-50-MW1	0.056	0.00072	<0.00050	0.00071	0.22	--	--
1/25/90	W-50-MW1	0.018	0.0016	<0.00050	0.0018	0.057	--	--
2/27/90	W-50-MW1	0.0032	0.0023	<0.00050	0.0032	0.055	--	--
3/26/90	W-49-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
4/18/90	W-49-MW1	0.0011	0.0016	<0.00050	0.0031	0.025	--	--
5/17/90	W-49-MW1	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
6/11/90	W-52-MW1	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
7/30/90	W-53-MW1	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/27/90	W-53-MW1	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
9/28/90	W-53-MW1	<0.00050	<0.00050	<0.00050	<0.00050	<0.050	--	--

See notes on page 7 of 7.

Applied GeoSystems

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 2 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-2	(Well destroyed 7/12/88)							
7/06/88	W-41-MW2	5.7	18.5	2.9	21.4	62	--	--
MW-3	(Well destroyed 8/29/88)							
4/06/88	W-39-MW3	<0.0005	<0.0005	<0.0005	<0.0005	0.02	--	--
7/06/88	W-41-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-43-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/26/88	W-44-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
MW-4								
4/11/88	W-37-MW4	0.0018	0.0163	0.0006	0.0071	0.08	--	--
7/06/88	W-41-MW4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-42-MW4	<0.0005	0.0009	<0.0005	<0.0005	<0.02	--	--
9/07/88			(Well not accessible)					
3/08/89	W-43-MW4	0.0038	0.0010	<0.0005	<0.0005	0.44	--	--
6/30/89	W-44-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.10	--	--
7/17/89	W-45-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.39	--	--
7/20/89	W-45-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.20	ND*	--
7/26/89	W-46-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.066	--	--
8/02/89	W-46-MW4	--	--	--	--	--	--	ND*
9/13/89	W-50-MW4	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
12/20/89	W-50-MW-4	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
3/26/90	W-49-MW-4	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/01/90	W-54-MW-4	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
12/27/90	W-54-MW-4	<0.00050	<0.00050	<0.00050	<0.00050	<0.050	--	--

See notes on page 7 of 7.

Applied GeoSystems

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 3 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-5d								
5/25/88	W-9-MW5a	<0.0005	0.0031	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-41-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-43-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	0.04	--	--
3/08/89	W-43-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/30/80	W-45-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-46-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/20/89	W-47-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-47-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-48-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-51-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/20/89	W-51-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/26/90	W-50-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/01/90	W-56-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/27/90	W-63-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
MW-5s								
5/25/88	W-41-MW5b	<0.0005	0.0009	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-41-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-44-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/22/88	W-42-MW5s	0.0009	0.0041	0.0013	0.0087	0.05	--	--
8/05/88	W-25-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--

See notes on page 7 of 7.

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 4 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-5s (continued)								
9/07/88	W-43-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/08/89	W-43-MW5s	<0.0005	<0.0005	<0.0005	<0.001	<0.02	--	--
6/30/89	W-45-Mw5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/20/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-47-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-50-MW5s	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
12/20/89	W-50-MW5s	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
3/26/90	W-49-MW5s	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/01/90	W-55-MW5s	<0.00050	<0.00050	<0.00050	<0.00050	<0.050	--	--
12/27/90	W-54-MW5s	<0.00050	<0.00050	<0.00050	<0.00050	<0.050	--	--
MW-6								
5/17/88	W-40-MW6	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/28/88	W-38-MW6	0.0318	0.0075	0.0054	0.0067	0.44	--	--
7/13/88	W-42-MW6	0.1623	0.0077	0.0225	0.0141	0.29	--	--
8/05/88	W-42-MW6	0.2450	0.0052	0.0471	0.0237	1.18	--	--
9/07/88	W-43-MW6	0.474	0.016	0.262	0.136	2.92	--	--
10/24/88	Well destroyed							

See notes on page 7 of 7.

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TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 5 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-7 (recovery well)								
7/13/88	W-34-MW7	0.86	1.91	0.71	4.42	16.7	--	--
7/22/88	W-50-MW7	0.136	0.085	0.005	0.058	0.46	--	--
8/05/88	W-45-MW7	0.0733	0.0528	0.0023	0.0281	0.27	--	--
2/09/89	W-50-MW7	0.600	0.688	0.010	0.448	6.7	--	--
6/30/89	W-Pump-MW7	0.18	0.050	0.013	0.040	1.1	--	--
8/02/89	W-TAP-MW7	0.0016	<0.0005	<0.0005	0.00060	0.031	--	--
9/13/89	W-Influent	<0.00050	0.0026	<0.00050	0.012	0.087	--	--
12/20/89	W-TAP-MW7	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
Well No. 7								
7/20/89	Well 7	--	--	--	--	--	ND*	--
8/02/89	W-TAP-CW7	--	--	--	--	--	--	ND*
3/26/90	W-TAP-MW7	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
MW-8								
10/03/89	W-53-MW8	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
12/20/89	W-52-MW8	<0.00050	<0.00050	<0.00050	0.00061	<0.020	--	--
1/31/90	W-55-MW8	<0.00050	<0.00050	<0.00050	0.00087	<0.020	--	--
2/09/90	W-52-MW8	<0.00050	<0.00050	<0.00050	0.0011	<0.020	--	--
	(Blank)	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
3/26/90	W-55-MW8	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
	(Blank)	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
4/18/90	W-52-MW8	<0.00050	0.00058	<0.00050	0.0011	<0.020	--	--
5/17/90	W-60-MW8	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--

See notes on page 7 of 7.

Applied GeoSystems

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 6 of 7)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-8								
6/11/90	W-62-MW8	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/01/90	W-61-MW8	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/27/90	W-70-MW8	<0.00050	<0.00050	0.00050	0.00050	<0.020	--	--
9/28/90	W-71-MW8	<0.00050	<0.00050	<0.00050	0.00050	<0.050	--	--
12/27/90	W-67-MW8	<0.00050	<0.00050	<0.00050	0.0006	<0.050	--	--
MW-9								
10/13/89	W-50-MW9	1.0	9.2	3.0	13	89	--	--
12/20/89	W-50-MW9	6.3	31	9.5	55	190	--	--
1/25/90	W-50-MW9	2.4	9.4	2.7	15	77	--	--
2/27/90	W-50-MW9	1.2	7.1	2.3	14	97	--	--
3/26/90	W-49-MW9	1.8	7.7	2.0	11	89	--	--
4/18/90	W-49-MW9	2.0	7.5	2.5	16	110	--	--
5/17/90	W-50-MW9	1.5	5.7	2.3	14	81	--	--
6/11/90	Not sampled because of the presence of floating product							
8/27/90	Not sampled because of dry well							
MW-10								
10/12/89	W-52-MW10	<0.00050	<0.00050	<0.00050	0.0015	0.020	--	--
12/20/89	W-52-MW10	<0.00050	<0.00050	<0.00050	0.0018	<0.020	--	--
3/26/90	W-51-MW10	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--
8/01/90	W-57-MW10	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--

See notes on page 7 of 7.

Applied GeoSystems

TABLE 3
RESULTS OF GROUND-WATER SAMPLES
(page 7 of 7)

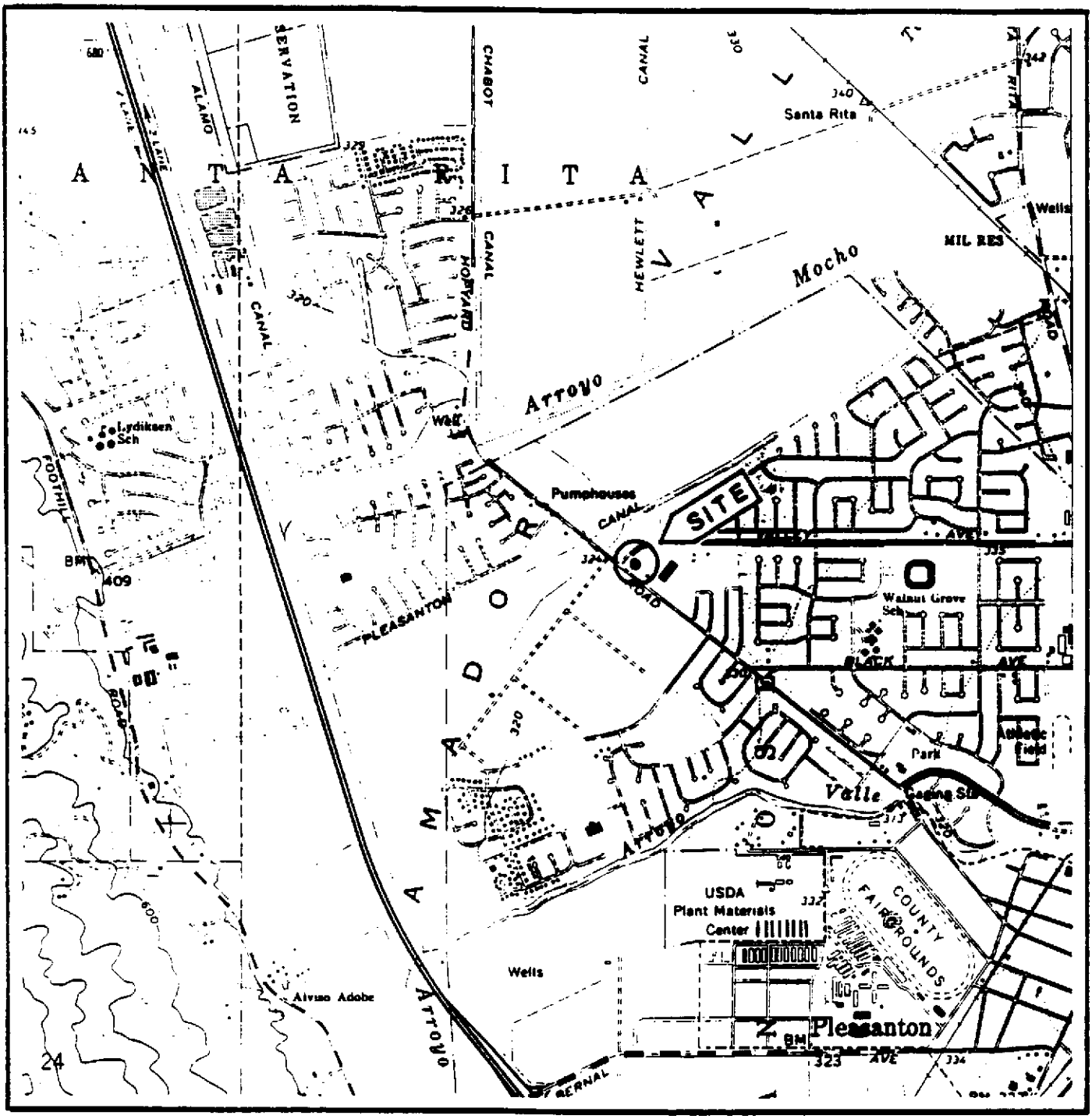
Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-11								
11/16/89	W-51-MW11	0.0041	0.0094	0.00074	0.020	0.15	--	--
12/20/89	W-50-MW11	0.0072	0.0075	0.0029	0.013	0.15	--	--
3/26/90	W-50-MW11	<0.00050	<0.00050	<0.00050	0.0027	0.032	--	--
7/30/90	W-54-MW11	<0.00050	<0.00050	<0.00050	0.0038	0.026	--	--

Results in milligrams per liter (mg/l) = parts per million (ppm)
TPHg = total petroleum hydrocarbons as gasoline by EPA modified Method 8015
EPA 502.2 = EPA Method 502.2 (volatile organic compounds)
EPA 524.2 = EPA Method 524.2 (volatile organic compounds)
< = Less than the method detection limits of the laboratory
-- = Not analyzed or not applicable
ND = Nondetectable or below the method detection limit(s) of the laboratory
* = Nondetectable concentrations for 58 volatile organic compounds
Well No. 7 = City of Pleasanton Municipal Well No. 7
Sample designation: W-50-MW11
- W = water
- 50 = depth of sample to the nearest foot (for well MW-7, sample collected from a sample port at the surface)
- MW11 = monitoring well number

TABLE 4
RESULTS OF INFLUENT AND EFFLUENT VAPOR SAMPLES

Date	Sample No.	TPHg	Benzene	Toluene	Ethyl-benzene	Total xylenes
11/30/90	influent	*1800	*19	*21	*15	*52
12/11/89	influent	0.33	<0.0001	0.0005	0.0003	0.0008
12/15/90	influent	0.94	<0.0005	0.011	0.0083	0.025
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/17/90	influent	0.20	0.0024	0.0016	0.0010	0.0026
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/28/90	influent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
1/4/91	influent	0.94	0.013	0.0005	0.0006	0.0015
1/14/91	influent	1.2	0.0023	0.0013	0.0009	0.0039

Results are in parts per million (ppm).
* = Results in milligrams per cubic meter (mg/m3).
TPHg = Total petroleum hydrocarbons as gasoline.
< = Less than the method detection limits of the laboratory.



Source: U.S. Geological Survey
7.5-Minute Quadrangle
Dublin, California
Photorevised 1980

N

Approximate Scale

2000 1000 0 2000 4000

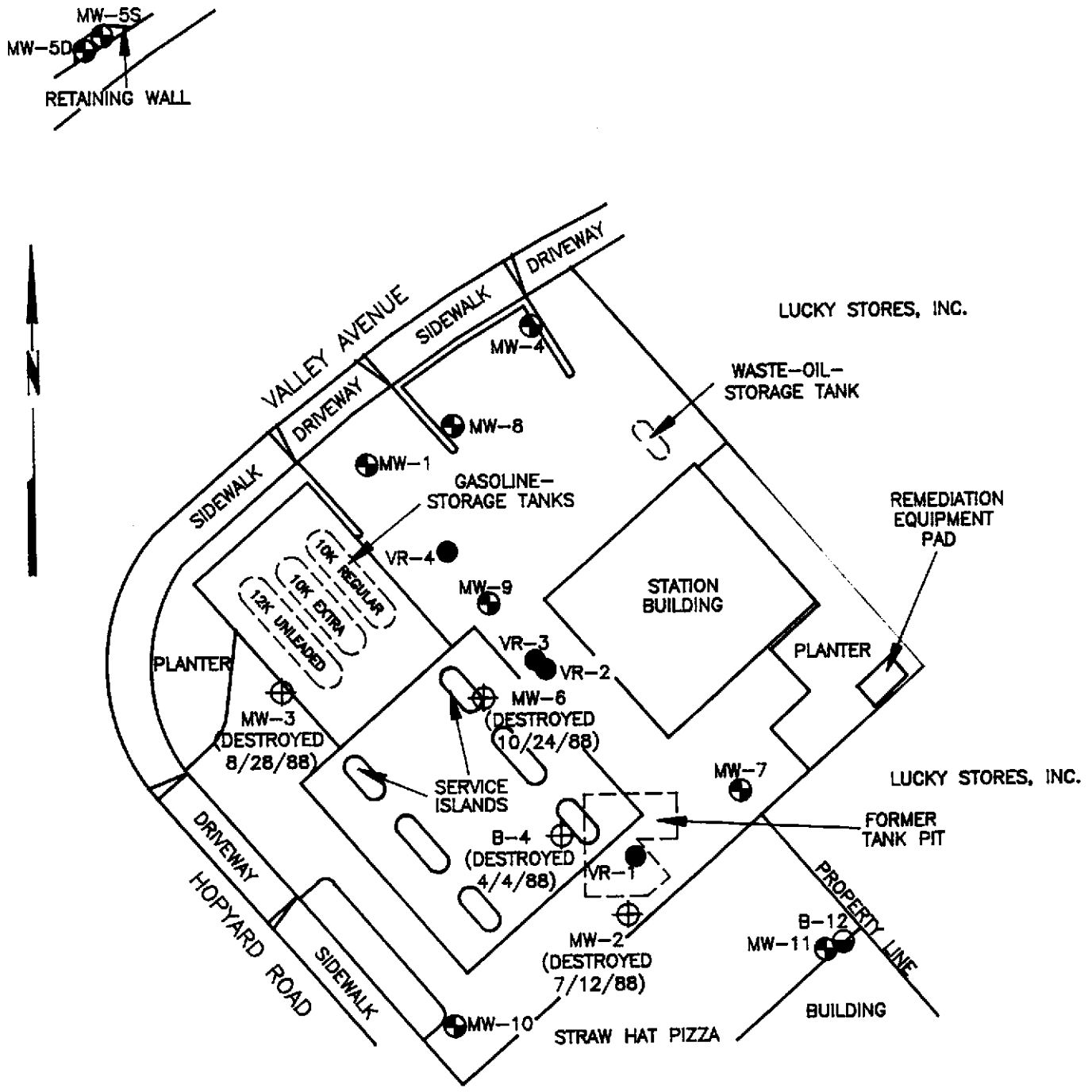
feet

Applied GeoSystems

PROJECT NO. 18034-8

SITE VICINITY MAP
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE
P - 1



MW-7 = Monitoring well
VR-1 = Vapor recovery well
B-12 = Soil boring
MW-6 = Former well or boring

Approximate Scale
40 20 0 40 80
feet

Applied GeoSystems

PROJECT NO. 18034-8

GENERALIZED SITE PLAN
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE
P - 2

FIELD PROCEDURES

Subjective Evaluations

Before ground-water samples were collected for subjective evaluations, the depth to static water level in each well was measured to the nearest 0.01 foot with a Solinst electronic water-level indicator. Ground-water samples were then collected from each well by gently lowering approximately half the length of a Teflon bailer past the air-water interface. The samples were retrieved and examined for evidence of floating product and sheen. The bailer was washed with Alconox, a commercial biodegradable detergent, and rinsed with deionized water before each use.

Ground-Water Sampling

Wells MW-4, MW-5d, MW-5s, and MW-8 were each purged of approximately three well volumes of water. A water sample was collected from each well after the well had recharged to more than 80 percent of the static level. A clean Teflon bailer was used to collect the ground-water samples. Half the length of the bailer was lowered past the air-water interface to retrieve the water sample. The bailer was retrieved and the water was slowly decanted into laboratory cleaned, 40-milliliter, volatile-organic analysis, glass sample vials with Teflon-lined caps. Hydrochloric acid was added to the samples as a preservative. The sample vials were promptly capped, labeled, and placed in iced storage for transport to Applied Analytical Environmental Laboratories. Chain-of-custody protocol was observed throughout the handling of samples.

Water Storage and Disposal

Purged ground water was temporarily stored onsite in 17E, 55-gallon liquid-waste drums approved for this purpose by the Department of Transportation. The purged water was discharged through the oil-water separator onsite and into the sanitary sewer under a permit from the Dublin-San Ramon Services District.

Influent and Effluent Vapor Sampling

Influent and effluent vapors samples were collected at the catalytic oxidizer's inlet and outlet ports using evacuated aerosol containers (280 cubic centimeter Vacuum Samplers). These Vacuum Samplers were fitted with a septum port and needle guide, through which the containers were filled for subsequent laboratory analysis.

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

PROJECT NO: 18034-8

PROJECT NAME: EXXON - PLEASANTON

PO NO:

SAMPLERS (Signature):

DATE MM/DD/YY	TIME		No. of Containers	TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)				Preserved?	REMARKS	LABORATORY I.D. NUMBER
				ANALYSIS								
12/27/90		W-54-MW4	3	X	X					HCl/ICE		
"		W-63-MW5D	3	X	X					"		
"		W-54-MW5S	3	X	X					"		
"		W-67-MW8	3	X	X					"		

RELINQUISHED BY (Signature):

RELINQUISHED BY (Signature):

RELINQUISHED BY (Signature):

DATE / TIME:

DATE / TIME:

DATE / TIME:

RECEIVED BY (Signature):

RECEIVED BY (Signature):

RECEIVED BY (Signature): 12-28-90

Laboratory: AGS

Turn Around: 2 wk

SEND RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Suite 100
Fremont, California 94639
(415) 651 1906

Proj. Mgr.: Kreth McVicker

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

1020lab.frm

Attention:	Mr. Keith McVicker	Date Sampled:	12-27-90
	Applied GeoSystems	Date Received:	12-28-90
	42501 Albrae Street	BTEX Analyzed:	01-07-91
	Fremont, CA 94538	TPHg Analyzed:	01-07-91
Project:	AGS 18034-8	TPHd Analyzed:	NR
		Matrix:	Water

	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	100
SAMPLE Laboratory Identification						
W-54-MW4 W1012466	ND	ND	ND	ND	ND	NR
W-63-MW5D W1012467	ND	ND	ND	ND	ND	NR
W-54-MW5S W1012468	ND	ND	ND	ND	ND	NR
W-67-MW8 W1012469	ND	ND	ND	0.6	ND	NR

ppb = parts per billion = µg/L = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

January 10, 1991
Date Reported

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

1103-6960

PROJ. NO.	PROJECT NAME
18034-8	Exxon Pleasanton
P.O. NO.	SAMPLERS (Signature)
	J. Ellen Kingsmaul

DATE MM/DD/YY	TIME		No. of Containers	TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)						Preserved?	REMARKS	LABORATORY I.D. NUMBER
				ANALYSIS										
11/30/90	12:00	CATOX INLET	2	X	X							ice		

RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
J. Ellen Kingsmaul	11/30	
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED FOR LABORATORY BY (Signature): 16:15 11/30/90

Laboratory: TAL

Turn Around: 2 week

SEND RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Fremont, CA 94538
(415) 651-1906

Proj. Mgr.: Rodger Witham

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (415) 783-6960
Facsimile (415) 783-1512

TAL

LOG NO.: 9343
DATE SAMPLED: 11/30/90
DATE RECEIVED: 11/30/90
DATE ANALYZED: 12/11/90
DATE REPORTED: 12/13/90

CUSTOMER: Applied Geosystems

REQUESTER: Rodger Witham

PROJECT: No. 18034-8, Exxon Pleasanton

Sample Type: Air

Method and Constituent:	Units	CATOX INLET Concentration	Reporting Limit
Modified Method CA-ADDL004:			
Total Petroleum Hydrocarbons as Gasoline	mg/m^3	1,800	300
Benzene	mg/m^3	19	3
Toluene	mg/m^3	21	3
Xylenes	mg/m^3	52	8
Ethylbenzene	mg/m^3	15	4

Louis W. DuPuis
Quality Assurance/Quality Control Manager

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 120039

PROJ. NO.	PROJECT NAME
86	EXXON Pleasanton
P.O. NO.	SAMPLERS (Signature)
	[signature]

DATE MM/DD/YY	TIME		No. of Containers	TPHgasoline (8015)	BTEX (8020/8020)	TPHdiesel (8015)						Preserved?	REMARKS	LABORATORY I.D. NUMBER
				ANALYSIS										
12/11/90	1:50 PM	Toddler Bag from	1	X	X								NTA.	
		Vapor extraction System (A)												

RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
RASmi El-Jurf		
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
[signature]		
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED FOR LABORATORY BY (Signature):
	12/14/90 1:30	[signature]

Laboratory:

Turn Around:

SEND RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Fremont, CA 94538
(415) 651-1906

Proj. Mgr.:

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

December 14, 1990 ChromaLab File No.: 1290039

APPLIED GEOSYSTEMS, INC.

Attn: Rasmi

RE: One air sample for Gasoline/BTEX analysis

Project Name: EXXON - PLEASANTON
Project Number: 86
Date Sampled: Dec. 11, 1990 Date Submitted: Dec. 11, 1990
Date Extracted: Dec. 12-13, 1990 Date Analyzed: Dec. 12-13,1990

RESULTS:

Sample No.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
A	330	N.D.	0.5	0.3	0.8
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	87.2%	88.5%	95.4%	87.1%	96.0%
DETECTION LIMIT	0.05	0.1	0.1	0.1	0.1
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798
Federal ID #68-0140157

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 1290064

PROJ. NO.	PROJECT NAME
	EXXON / Pleasanton
P.O. NO.	SAMPLERS (Signature)
	R. Sahni

DATE MM/DD/YY	TIME		No. of Containers	ANALYSIS: TPHgasoline (8015)	BTEX (8020/8021)	TPHdiesel (8015)						Preserved?	REMARKS	LABORATORY I.D. NUMBER
12/15/94	12:05	A-OUT / Air Sample (out)	1	X	X									
"	12:10	A-IN / Air Sample (in)	1	X	X									

RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):	Laboratory:	SEND RESULTS TO: Applied GeoSystems, 42501 Albrae Street, Fremont, CA 94538, (415) 651-1906
R. Sahni	12/15 / 12:30			
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):		
			Turn Around:	Proj. Mgr.:
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED FOR LABORATORY BY (Signature):		
	12/15 / 12:30			

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

December 19, 1990 ChromaLab File No.: 1290064

APPLIED GEOSYSTEMS, INC.

Attn: Rasmi

RE: Two gas samples for Gasoline/BTEX analyses

Project Name: EXXON/PLEASANTON
Date Sampled: Dec.14,1990 Date Submitted: Dec. 14, 1990
Date Extracted: Dec. 14, 1990 Date Analyzed:Dec. 14, 1990

RESULTS:

Sample No.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
A - IN	940	N.D.	11	8.3	25
A - OUT	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	87.2%	88.5%	95.4%	87.1%	96.0%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798
Federal ID #68-0140157

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 1290071

PROJ. NO.	PROJECT NAME
6034-8	Exxon / Pleasanton
P.O. NO.	SAMPLERS (Signature)
	RA Smith

DATE MM/DD/YY	TIME		No. of Containers	ANALYSIS: TPHgasoline (8015)	BTEX (8020/8021)	TPHdiesel (8015)						Preserved?	REMARKS	LABORATORY I.D. NUMBER
12/17/90	2:00	A- in (to System)	1	X	X									
11	2:10	A-OUT (From System)	1	X	X									

RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):	Laboratory:	SEND RESULTS TO:
RA Smith	12/17			Applied GeoSystems 42501 Albrae Street Fremont, CA 94538 (415) 651-1906 Fax #
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):	Turn Around:	Proj. Mgr.:
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED FOR LABORATORY BY (Signature):		
	12/17 2:30 PM			

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

December 19, 1990 ChromaLab File No.: 1290071

APPLIED GEOSYSTEMS, INC.
Attn: Rasmi

RE: Two gas samples for Gasoline/BTEX analyses

Project Name: EXXON/PLEASANTON
Project Number: 18034 - 8
Date Sampled: Dec. 17, 1990 Date Submitted: Dec. 17, 1990
Date Extracted: Dec. 18, 1990 Date Analyzed: Dec.18,1990

RESULTS:

Sample No.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
A - IN	200	2.4	1.6	1.0	2.6
A - OUT	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	87.2%	88.5%	95.4%	87.1%	96.0%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798
Federal ID #68-0140157

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 1290142

PROJECT NO: 18034-8

PROJECT NAME: EXXON / Pleasanton

P.O. NO:

SAMPLERS (Signature): RAshi EL-Jabi

DATE MM/DD/YY	TIME		No. of Containers	TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)	Preserved?	REMARKS	LABORATORY I.D. NUMBER
12/28/90	1:45	A - IN	1	X	X				
"	1:54	A - OUT	1	X	X				

ANALYSIS

RELINQUISHED BY (Signature): [signature]
DATE / TIME: 12/28 1:00

RELINQUISHED BY (Signature):
DATE / TIME:

RELINQUISHED BY (Signature):
DATE / TIME: 12/28/9 1:00

RECEIVED BY (Signature):

RECEIVED BY (Signature):

RECEIVED BY (Signature): [signature]

Laboratory: CHROMALAB

Turn Around: NORMAL

SEND RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Suite 100
Fremont, California 94639
(415) 651 1906

Proj. Mgr.: Rodgers

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

January 2, 1991 ChromaLab File No.: 1290142

APPLIED GEOSYSTEMS,INC.

Attn: Rasmi

RE: two air samples for Gasoline/BTEX analysis

Project Name: EXXON / PLEASANTON
Project Number: 18034-8
Date Sampled: Dec. 28, 1990 Date Submitted: Dec. 28, 1990
Date Extracted: Dec. 28, 1990 Date Analyzed: Dec. 28, 1990
RESULTS:

Sample No.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
A-IN	N.D.	N.D.	N.D.	N.D.	N.D.
A-OUT	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	93.9%	84.8%	95.8%	101.8%	93.2%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
415/831-1788 • Facsimile 415/831-8798
Federal ID #68-0140157

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 191016

PROJECT NO: 1603.4-8

PROJECT NAME: EXXON / Pleasanton

SAMPLERS (Signature): RASmi

DATE MM/DD/YY	TIME		No of Containers	ANALYSIS: TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)				Preserved?	REMARKS	LABORATORY I.D. NUMBER
1/4/91	1:24	A - in	1	X	X							

RELINQUISHED BY (Signature): S Hart — DATE / TIME: 1/4

RECEIVED BY (Signature): [illegible] 1-4-91

RELINQUISHED BY (Signature):

DATE / TIME:

RECEIVED BY (Signature):

Laboratory: Chromalab

Turn Around: N/A

SEND RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Suite 100
Fremont, California 94639
(415) 651 1906

Proj. Mgr.: Kadgy

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

January 7, 1991

ChromaLab File No.: 0191016

APPLIED GEOSYSTEMS, INC.

Attn: Rodger

RE: One gas sample for Gasoline/BTEX analysis

Project Name: EXXON / PLEASANTON
Project Number: 18034-8
Date Sampled: Jan. 4, 1991
Date Extracted: Jan. 4, 1991

Date Submitted: Jan. 4, 1991
Date Analyzed: Jan. 4, 1991

RESULTS:

Sample No.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
A-IN	940	13	0.5	0.6	1.5
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	104.7%	105.5%	98.65	91.0%	93.0%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Laboratory Director

Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 191054

PROJECT NO.: 18034-7

PROJECT NAME: EXXON / Pleasanton

SAMPLERS (Signature): RASmi

DATE MM/DD/YY	TIME		No of Containers	ANALYSIS: TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)			Preserved?	REMARKS	LABORATORY I.D. NUMBER
1/14/91	AM	A— in	1	X	X					—	

RELINQUISHED By (Signature): [signature]

DATE / TIME: 1/14 | 12:45

RECEIVED By (Signature):

RELINQUISHED By (Signature):

DATE / TIME:

RECEIVED By (Signature):

RELINQUISHED By (Signature): [signature]

DATE / TIME: 1/14/91 | 1:45 PM

RECEIVED By (Signature): [signature]

Laboratory: CHROMALAB

Turn Around: NTA

SUBMIT RESULTS TO:
Applied GeoSystems
42501 Albrae Street
Suite 100
Fremont, California 94639
(415) 651 1906

Proj. Mgr.: Rodger

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

January 15, 1991 ChromaLab File No.: 0191054

APPLIED GEOSYSTEMS, INC.

Attn: Rodger

RE: One air sample for Gasoline/BTEX analysis

Project Name: EXXON / PLEASANTON
Project Number: 18034-7
Date Sampled: Jan. 14, 1991 Date Submitted: Jan. 14, 1991
Date Extracted: Jan. 14, 1991 Date Analyzed: Jan. 14, 1991

RESULTS:

Sample No.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
A-IN	1200	2.3	1.3	0.9	3.9
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	97.0%	94.5%	92.2%	99.6%	90.3%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Laboratory Director

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

August 2, 1990

Carol Bach
Exxon Company USA
43255 Mission Blvd.
Fremont, CA 94539

Application Number: *5125*
Equipment Location:
2991 Hopyard Road
Pleasanton, CA 94566

Gentlemen:

This is your Authority to Construct the following:

S-2 Soil Vapor Extraction System consisting of a M-D Pneumatics Vacuum Pump Model 3204 100 cfm, abated by A-3 Catalytic Oxidizer, Hasstech MMC-5A, 100 cfm.

Operation of this equipment will be subject to the following specific conditions:

1. **Precursor Organic Compound (POC) emissions from S-2 shall be abated by A-3 Catalytic Oxidizer during all periods of operation.**

2. **The Precursor Organic Compound (POC) destruction efficiency of A-3 Catalytic Oxidizer shall be maintained at a minimum of 98% by weight.**

3. **This equipment shall not emit into the atmosphere more than 0.03 pounds of benzene per day.**

4. **The A-3 Catalytic Oxidizer shall be properly maintained and kept in good operating condition at all times. In no event shall the minimum operating temperature of A-3 Catalytic Oxidizer be less than 600 degrees Fahrenheit.**

5. **To determine compliance with Condition Number 4, the A-3 Catalytic Oxidizer shall be equipped with continuous measuring and temperature recording instrumentation consisting of at least 2 thermocouple temperature probes in the A-3 Catalytic Oxidizer and at least one recording device, which will continuously record temperature.**

6. **The exit gas temperature from the Catalytic Oxidizer shall not exceed 1050°F. If the exit gas temperature exceeds 1050°F, the controller shall shut down the operation, S-2 Soil Vent System.**

7. **Dilution air shall be supplied as necessary to insure Condition Number 6 is not exceeded.**

8. **The measuring and recording instrumentation to be installed and the specific placement within the A-3 Catalytic Oxidizer in condition number 5, is subject to the prior approval of the Source Test Section of the District Technical Division.**

9. **The change in temperature across the catalyst bed shall be recorded at least once a week. When these temperature readings are taken an inlet precursor organic compound POC concentration to the A-3 Catalytic Oxidizer shall be taken and recorded in a District approved log. The inlet concentration shall be determined by an FID vapor analyzer, bag sample analysis or other method approved in writing by the APCO.**

10. **The temperature data collected from the temperature recorder shall be maintained in a file which shall be available for District inspection for a period of at least 2 years following the date on which such data are recorded.**

11. **Within ten days of startup, the operator of this source, shall conduct an efficiency test to determine the weight percent reduction of Precursor Organic Compound (POC) emissions through A-3 Catalytic Oxidizer. As part of this test the inlet and outlet exhaust to A-3 Catalytic Oxidizer shall be speciated to determine the organic compounds present and their respective concentrations. All test results shall be provided to the District within 30 days after testing has occurred. All source test methods used shall be subject to the prior approval of the Source Test Section of the district Technical Division.**

12. **The operator of this source shall maintain the following records for each day of operation of the source:**

    a) **Hours and time of operation.**
    b) **Each emission test, analysis or monitoring results logged in for the day of operation they were taken.**
    c) **Analyses results for any catalyst plugs removed from the bed to determine remaining life of the catalyst.**

    Such records shall be retained and made available for inspection by the District for two years following the date the data is recorded.

Notification

Please notify the District by letter at least **three days** before the initial operation of the equipment is to take place so that we may observe the equipment in operation and verify conformance with the Authority to Construct. Operation includes any **start-up** of the source for testing or other purposes. Operation of equipment without prior written notification to the District or beyond the start-up period without a Permit to Operate may result in enforcement action.

Start-Up Period

After receipt of the start-up letter required above, this Authority to Construct authorizes operation during the start-up period from the date of initial operation noted in your start-up letter until the Permit to Operate is issued, up to a maximum of 60 days. **All conditions (specific or implied) of the Authority to Construct are in effect during the start-up period.**

Fees

District Regulation 3 requires a fee for each new Permit to Operate. You will be invoiced upon receipt of your start-up letter. No permits will be issued until all outstanding fees are paid.

Implied Conditions

In the absence of specific permit conditions to the contrary, the throughputs, fuel and material consumptions, capacities, and hours of operation described in your permit application will be considered maximum allowable limits. A new permit will be required before any increase in these parameters, or change in raw material handled, may be made.

Expiration

In accordance with Regulation 2-1-407, this Authority to Construct expires two years from the date of issuance unless substantial use of the authority has begun.

Correspondence

Please include your application number with any correspondence with the District regarding this matter. If you have any questions on this matter, please call **Alexander V. Saschin, Air Quality Engineer at (415)771-6000, extension 190.**

Very truly yours,

Milton Feldstein
Air Pollution Control Officer

by John A Swanson
Permit Services Division

JAS:AVS:ml

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

January 4, 1991

Carol Bach
Exxon Company USA
43255 Mission Blvd.
Fremont, CA 94539

RECEIVED
JAN 14 1991

Application Number: *5125*
Equipment Location:
2991 Hopyard Road
Pleasanton, CA

Gentlemen:

Attached is your Permit to Operate the following:

S-2 Soil Vapor Extraction System consisting of a M-D Pneumatics Vacuum Pump Model 3204 100 cfm, abated by A-3 Catalytic Oxidizer, Hasstech MMC-5A, 100 cfm.

All Permits should be posted in a clearly visible and accessible place on or near the equipment to be operated, or kept available for inspection at any time.

Operation of this equipment in violation of District Regulations or any permit conditions is subject to penalty action.

In the absence of specific permit conditions to the contrary, the throughputs, fuel and material consumptions, capacities, and hours of operation described in your permit application will be considered maximum allowable limits. A new permit will be required before any increase in these parameters, or change in raw material handled may be made.

Please include your permit number with any correspondence with the District. If you have any further questions on this matter, please call **Alex V. Saschin, Air Quality Engineer at (415) 771-6000, extension 190.**

Very truly yours,

Milton Feldstein
Air Pollution Control Officer

by John D. Swanson
Permit Services Division

JAS:AVS:ge
Attachment

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE NO. 5125

PLANT NO. 4347

Exxon Company USA

IS HEREBY GRANTED A PERMIT TO OPERATE THE FOLLOWING EQUIPMENT: SOURCE NO. 3

Soil Vapor Extraction System consisting of a M-D Pneumatics Vacuum Pump Model 3204 100 cfm, abated by A-3 Catalytic Oxidizer, Hasstech MMC-5A, 100 cfm.

LOCATED AT: *2991 Hopyard Road*
Pleasanton, California

CONDITIONS: ☐ YES ☐ NO

PLEASE SEE ATTACHMENTS

MILTON FELDSTEIN
AIR POLLUTION CONTROL OFFICER

DATE *January 4, 1991*

BY *John A Swanson*
PERMIT SERVICES DIVISION

EXPIRATION DATE: *January 4, 1992*

THIS PERMIT DOES NOT AUTHORIZE ANY VIOLATION OF THE RULES AND REGULATIONS OF THE BAAQMD OR THE HEALTH & SAFETY CODE OF THE STATE OF CALIFORNIA.

FORM P-103
8/89

1. Precursor Organic compound (POC) emissions from S-1 shall be abated by A-3 Catalytic Oxidizer during all periods of operation.

2. The Precursor Organic Compound (POC) destruction efficiency of A-3 Catalytic Oxidizer shall be maintained at a minimum of 98% by weight.

3. This equipment shall not emit into the atmosphere more than 0.03 pounds of benzene per day.

4. The A-3 Catalytic Oxidizer shall be properly maintained and kept in good operating condition at all times. In on event shall the minimum operating temperature of A-3 Catalytic Oxidizer be less than 600 degrees Fahrenheit.

5. To determine compliance with Condition Number 4, the A-1 Catalytic Oxidizer shall be equipped with continuous measuring and temperature recording instrumentation consisting of at least 2 thermocouple temperature probes in the A-3 Catalytic Oxidizer and at least one recording device, which will continuously record temperature.

6. The exit gas temperature from the Catalytic Oxidizer shall not exceed 1050oF. If the exit gas temperature exceeds 1050oF, the controller shall shut down the operation, S-2 Soil Vent System.

7. Dilution air shall be supplied as necessary to insure Condition Number 6 is not exceeded.

8. The measuring and recording instrumentation to be installed and the specific placement within the A-3 Catalytic Oxidizer in condition number 5, is subject to the prior approval of the Source Test Section of the District Technical Division.

9. The change in temperature across the catalyst bed shall be recorded at least once a week. When the temperature readings are taken an inlet precursor organic compound POC concentration to the A-3 Catalytic Oxidizer shall be taken and recorded in a District approved log. The inlet concentration shall be determined by an FID vapor analyzer, bag sample analysis or other method approved in writing by the APCO.

10. The temperature data collected from the temperature recorder shall be maintained in a file which shall be available for District inspection for a period of at least 2 years following the date on which such data are recorded.

11. Within ten days of startup, the operator of this source, shall conduct an efficiency test to determine the weight percent reduction of Precursor Organic Compound (POC) emissions through A-3 Catalytic Oxidizer. as part of this test the inlet and outlet exhaust to A-3 Catalytic Oxidizer shall be speciated to determine the organic compounds present and their respective concentrations. All test results shall be provided to the District within 30 days after testing has occurred. All source test methods used shall be subject tot he prior approval of the Source Test Section of the District Technical Division.

12. The operator of this source shall maintain the following records for each day of operation of the source:

    a) Hours and time of operation.
    b) Each emission test, analysis or monitoring results logged in for the day of operation they were taken.
    c) Analyses results for any catalyst plugs removed from the bed to determine remaining life of the catalyst.

    Such records shall be retained and made available for inspection by the District for two years following the date the data is recorded.