EXXON COMPANY, U.S.A.

ENVIRONMENTAL PROTECTION
00 MAR 22 PM 4:40

P.O. BOX 4032 • CONCORD, CA 94524-4032
MARKETING DEPARTMENT • ENVIRONMENTAL ENGINEERING

DARIN L. ROUSE
SENIOR ENGINEER

(925) 246-8768
(925) 246-8798 FAX

#136

March 17, 2000

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

RE: Former Exxon RAS #7-3006/720 High Street, Oakland, California.

Dear Mr. Chan:

Attached for your review and comment is a document entitled ***Work Plan for Annual Monitoring, Well Destruction and Remediation System Removal***, dated March 14, 2000, for the above referenced site. The work plan was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and proposes an annual monitoring program, the destruction of selected groundwater monitoring wells, and the removal of the remediation system at the subject site.

If you have any questions or comments, please contact me at (925) 246-8768.

Sincerely,

Darin L. Rouse
Senior Engineer

Attachment: ERI's Work Plan for Annual Monitoring, Well Destruction and Remediation System Removal, dated March 14, 2000.

cc: w/attachment
Mr. Stephen Hill - California Regional Water Quality Control Board - San Francisco Bay Region

w/o attachment
Mr. James F. Chappell - Environmental Resolutions, Inc.

EXXON COMPANY, U.S.A.

P.O. BOX 4032 • CONCORD, CA 94524-4032
MARKETING DEPARTMENT • ENVIRONMENTAL ENGINEERING

DARIN L. ROUSE
ENVIRONMENTAL ENGINEER

(925) 246-8768
(925) 246-8798 FAX

March 7, 2000

136

Mr. Larry Johmann
Alameda County Publics Works Agency
Water Resources Section
399 Elmhurst Street
Hayward, California 94544-1395

RE: Former Exxon RAS #7-3006/720 High Street, Oakland, California.

Dear Mr. Johmann:

Attached for your review and comment is a report entitled ***Vadose-Zone Monitoring Well Destruction***, dated February 28, 2000, for the above referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and presents the details of the monitoring well destruction activities at the subject site.

If you have any questions or comments, please contact me at (925) 246-8768.

Sincerely,

Darin L. Rouse
Environmental Engineer

Attachment: ERI's Vadose-Zone Monitoring Well Destruction, dated February 28, 2000.

cc: w/attachment
Mr. Barney Chan - Alameda County Health Care Services Agency - Environmental Health Division
Mr. Stephen Hill - California Regional Water Quality Control Board - San Francisco Bay Region

w/o attachment
Mr. James F. Chappell - Environmental Resolutions, Inc.

ENVIRONMENTAL RESOLUTIONS, INC.

March 14, 2000
ERI 201014.W01

Mr. Darin L. Rouse
Exxon Company, U.S.A.
P.O. Box 4032
Concord, California 94524-4032

Subject: Work Plan for Annual Monitoring, Well Destruction and Remediation System Removal at Former Exxon Service Station 7-3006, 720 High Street, Oakland, California.

Mr. Rouse:

At the request of Exxon Company, U.S.A. (Exxon), Environmental Resolutions, Inc. (ERI) performs environmental assessment activities at the subject site. ERI prepared this Work Plan after attending a March 2, 2000, meeting with Mr. Barney Chan of the Alameda County Health Care Services Agency (the County). This Work Plan details the proposed annual monitoring program, the destruction of selected groundwater monitoring wells, and the removal of the remediation system.

BACKGROUND

The site is located on the corner of High Street and Coliseum Way in Oakland, California as shown on the Site Vicinity Map (Plate 1). The locations of the former underground storage tanks (USTs), former dispenser islands, and other selected site features, are shown on the Generalized Site Plan (Plate 2).

Exxon operated a remediation system at the site from January 9, 1995 through July 16, 1999. Currently there are 13 on-site groundwater monitoring wells, 1 off-site groundwater monitoring well, 2 vadose-zone monitoring wells, 6 (AS) air sparge wells, 7 groundwater recovery wells, a groundwater interceptor trench, and the associated conveyance piping and above ground equipment.

ANNUAL MONITORING

ERI proposes the following annual monitoring program. Groundwater monitoring wells MW1, MW2, MW4, MW6, MW12, and MW14 will be monitored and sampled on an annual basis to evaluate groundwater conditions. These wells were selected to represent conditions both inside and outside the dissolved hydrocarbon plume. The locations of the wells are shown on Plate 2. Well construction logs are included in Attachment A. The samples will be analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), total purgeable petroleum hydrocarbons as gasoline (TPPHg), total extractable petroleum hydrocarbons as diesel (TEPHd), nitrate, ferrous iron, sulfate, and methane. Dissolved oxygen (DO) and oxidation/reduction potential (ORP) readings will be collected in the field. Annual reports will be submitted detailing the recent sampling event and will include a cumulative table and a summary of the analytical data. ERI believes that the groundwater gradient and flow direction have equilibrated to static conditions and a calculated hydraulic gradient and flow direction will be included in the annual reports.

WELL DESTRUCTION

ERI proposes to destroy groundwater monitoring wells MW3, MW7 through MW11, MW13, and MW15, vadose-zone monitoring wells VW-2 and VW-3, AS wells AS1 through AS6, and groundwater recovery wells RW1 through RW7. The locations of the wells are shown on Plate 2. The wells will be destroyed in accordance with well destruction permits from the Alameda County Public Works Agency. The well destruction procedures are detailed in the field protocol (Attachment B). After the completion of fieldwork, ERI will prepare and submit a report documenting the proper destruction of the wells.

REMEDIATION SYSTEM REMOVAL

The remediation system operated at the site from January 9, 1995 through July 16, 1999. The groundwater remediation system was shutdown on December 16, 1998, and the AS/SVE system was shutdown on July 28, 1999. ERI will remove all of the aboveground remediation equipment. ERI will remove all electrical wiring, fittings, and hoses from the subsurface conveyance piping. The subsurface piping will then be capped and sealed. The sewer connection will be destroyed in accordance with East Bay Municipal Utilities District (EBMUD) guidelines.

SCHEDULE OF OPERATIONS

Upon regulatory approval of this Work Plan, ERI is prepared to implement the work in accordance with the following schedule:

- Within 15 calendar days of receiving approval of this Work Plan, well destruction permits will be submitted to the appropriate agencies.
- Within 30 calendar days of receiving the required permits, ERI will begin fieldwork.
- Within 45 calendar days of completing fieldwork, a well destruction report will be submitted to the County.

ERI recommends signed copies of this Work Plan be forwarded to the following:

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

Mr. Stephen Hill
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Please call Mr. James F. Chappell at (415) 382-4323 with any questions regarding this project.

Sincerely,
Environmental Resolutions, Inc.

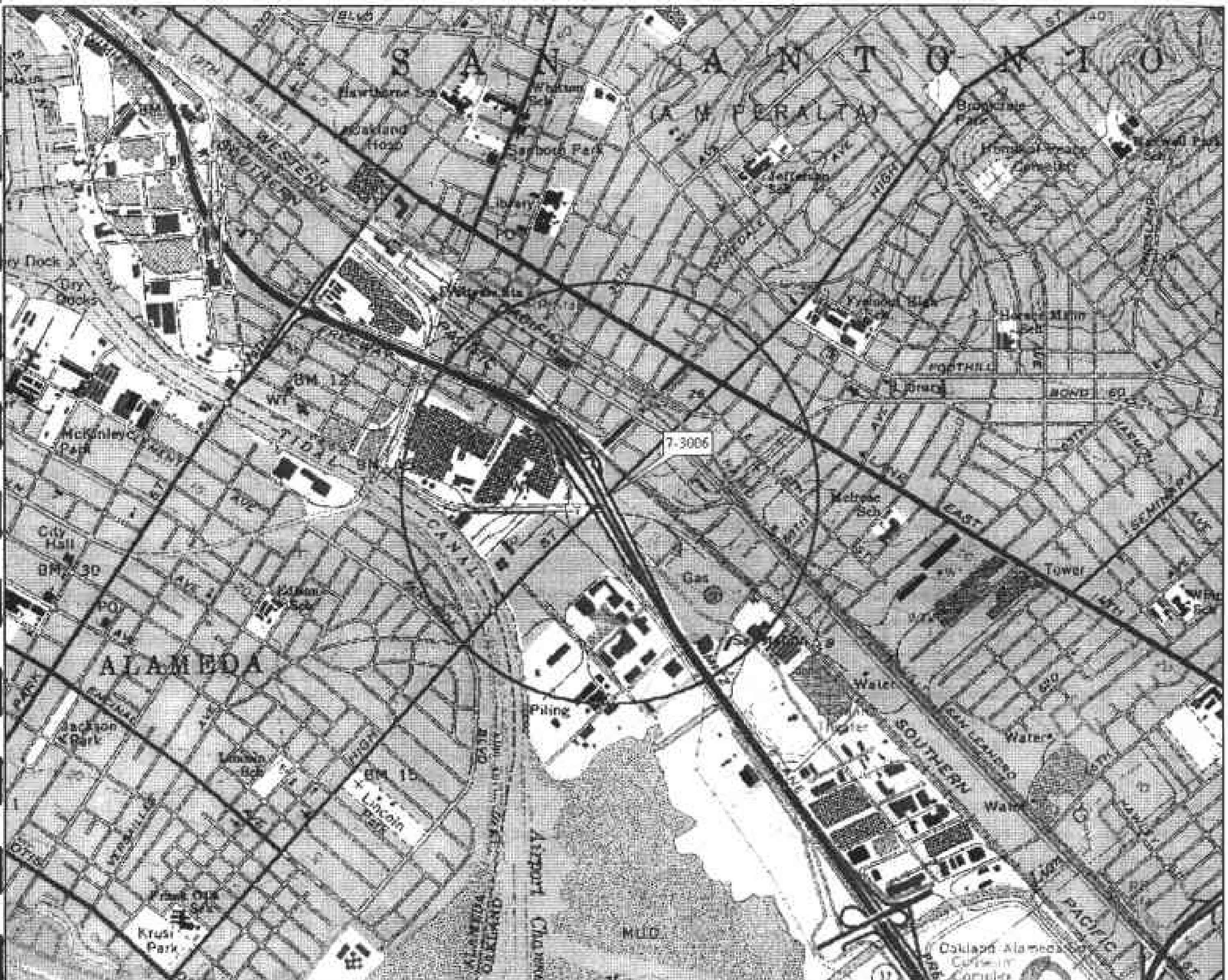
James F. Chappell
Senior Staff Scientist

REGISTERED GEOLOGIST
JOHN BAILEY BOBBITT
4/3/00
No. 4313
STATE OF CALIFORNIA

John B. Bobbitt
R.G. 4313

Attachments:
Plate 1: Site Vicinity Map
Plate 2: Generalized Site Plan

Attachment A: Well Construction Logs
Attachment B: Field Protocol – Well Destruction



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

550 ft Scale 1 : 19,200 Detail: 13.0 Datum: WGS84

FN 2010

EXPLANATION

1/2-mile radius circle

N

APPROXIMATE SCALE

0 .5 1 mile

SOURCE:
Modified from a map
provided by
DeLorme 3-D TopoQuads

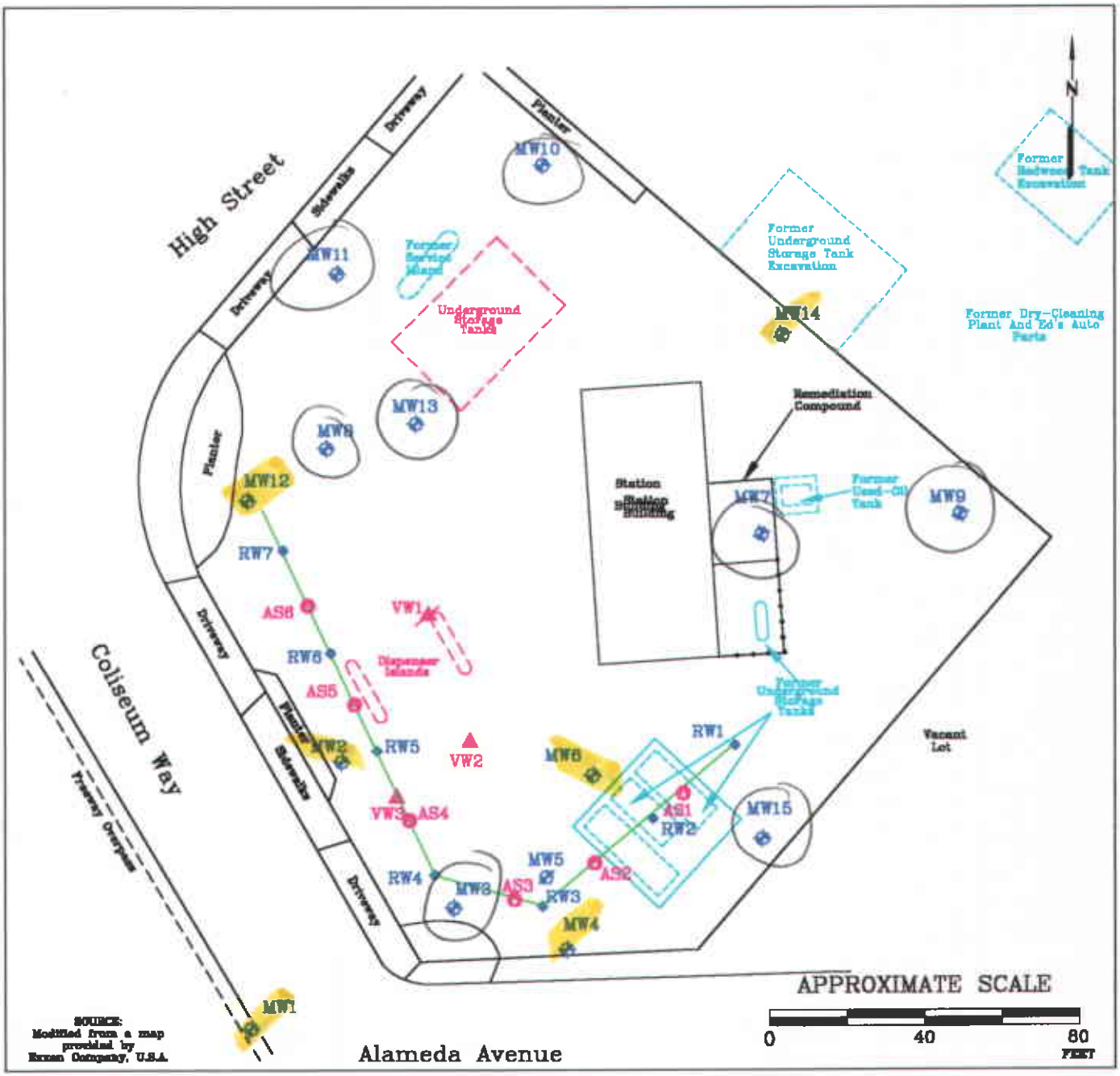
ERI ENVIRONMENTAL RESOLUTIONS, INC.

SITE VICINITY MAP

FORMER EXXON SERVICE STATION 7-3006
720 High Street
Oakland, California

PROJECT NO.
2010

PLATE
1



FN 20100002

EXPLANATION

- MW15 — Groundwater Monitoring Well
- MW5 — Groundwater Monitoring Well (Destroyed)
- RW7 — Recovery Monitoring Well
- VW3 — Vadose Well
- VW1 — Vadose Well (Destroyed)
- AS6 — Air Sparging/Vapor Extraction Well
- —— Interceptor Trench

ENVIRONMENTAL RESOLUTIONS, INC.

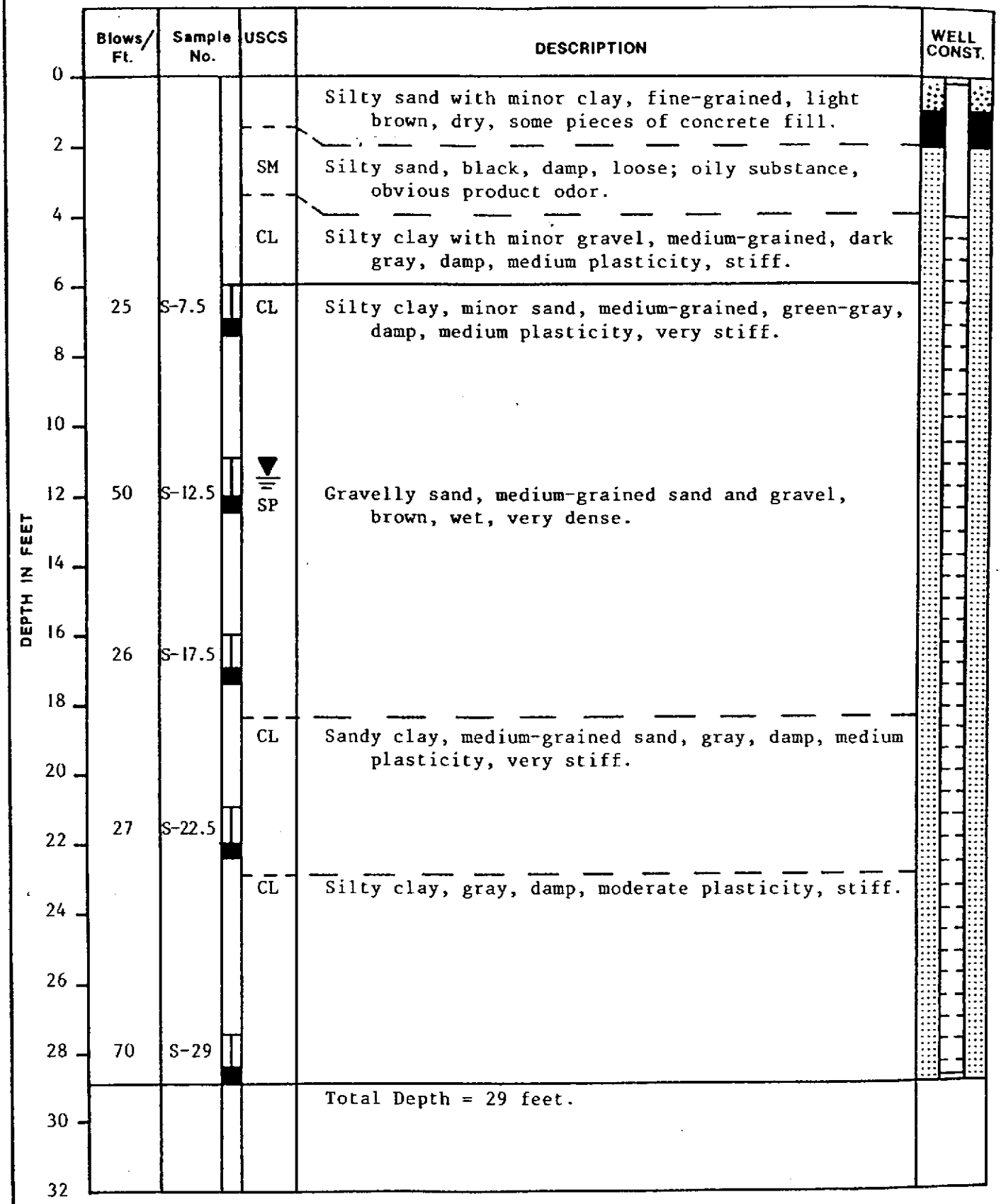
GENERALIZED SITE PLAN

FORMER EXXON SERVICE STATION 7-3006
720 High Street
Oakland, California

PROJECT NO.
2010
PLATE
2

ATTACHMENT A

WELL CONSTRUCTION LOGS



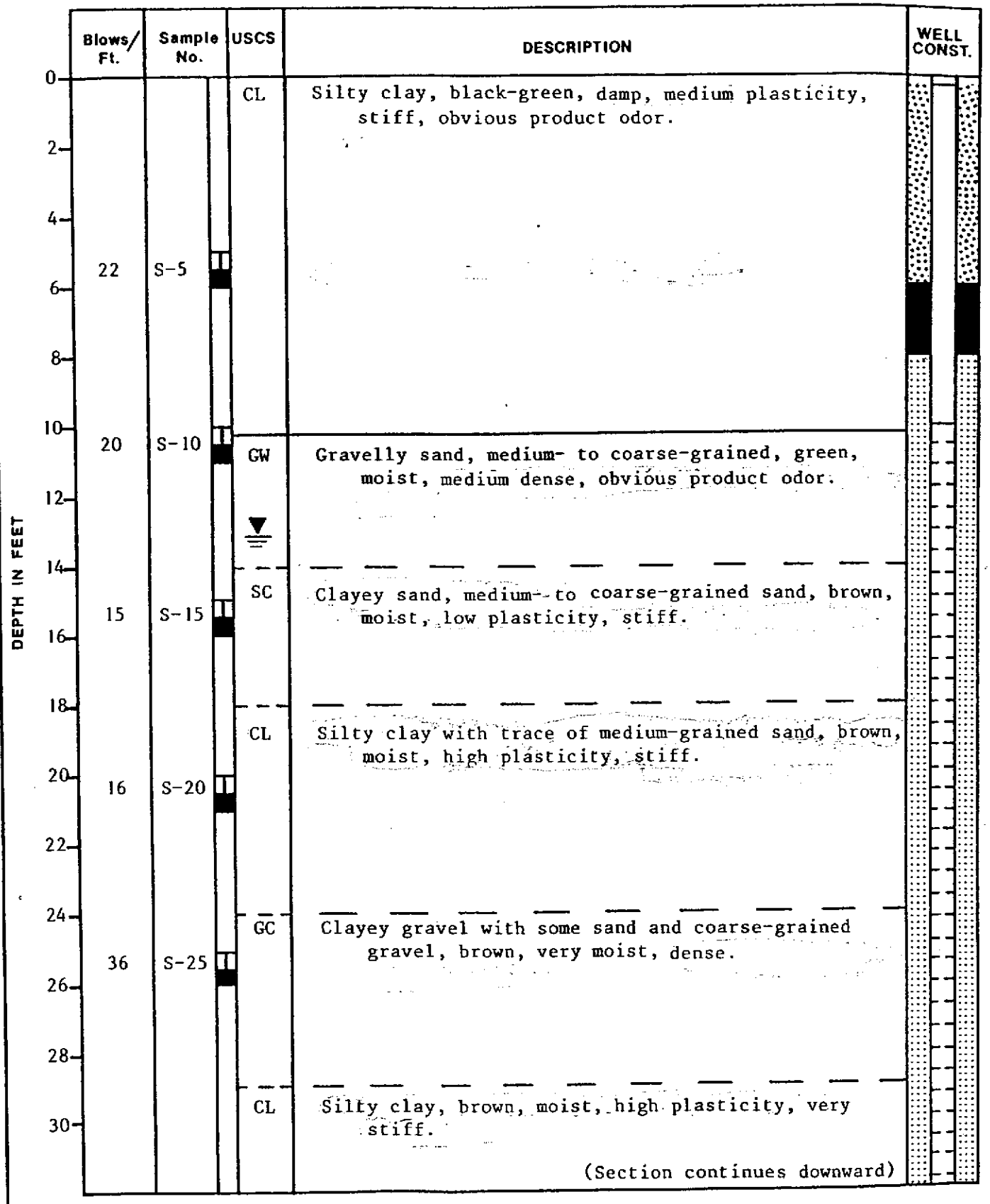
Applied GeoSystems
43255 Mission Blvd Suite B Fremont, CA 94539 (415) 651-1906

PROJECT NO. 87042-5

LOG OF BORING B-1/MW-1

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 4



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PROJECT NO. 87042-5

LOG OF BORING B-2/MW-2

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 5

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	22	S-30	CL	Silty clay, brown, moist, high plasticity, very stiff.	
32					
34	19	S-35			
36				Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	
38					

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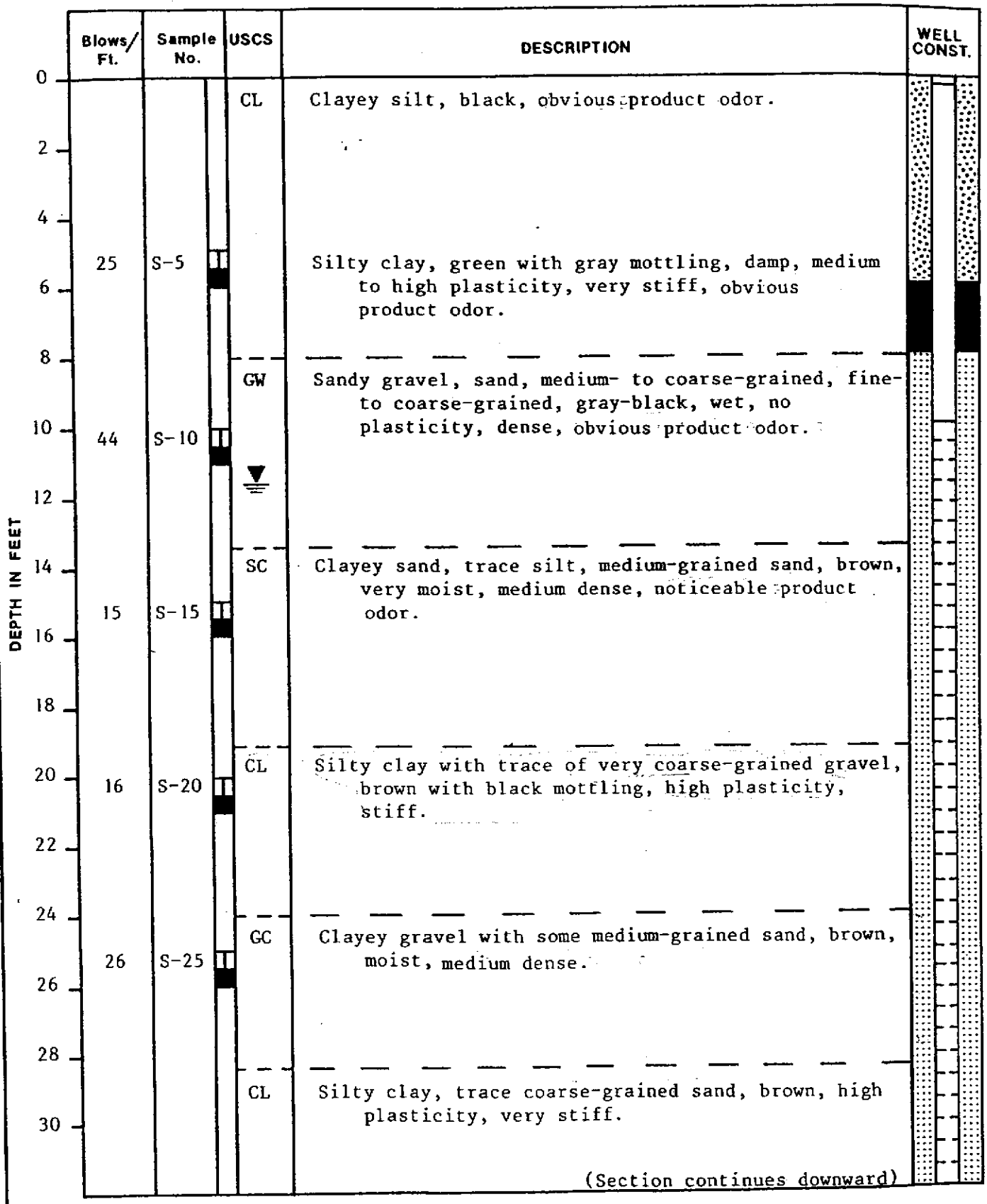
PROJECT NO. 87042-5

LOG OF BORING B-2/MW-2

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 6



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PROJECT NO. 87042-5

LOG OF BORING B-3/MW-3

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 7

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	20	S-30	CL	Silty clay, trace coarse-grained sand, brown, high plasticity, very stiff.	
32					
34					
36	23	S-35			
38				Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	
40					

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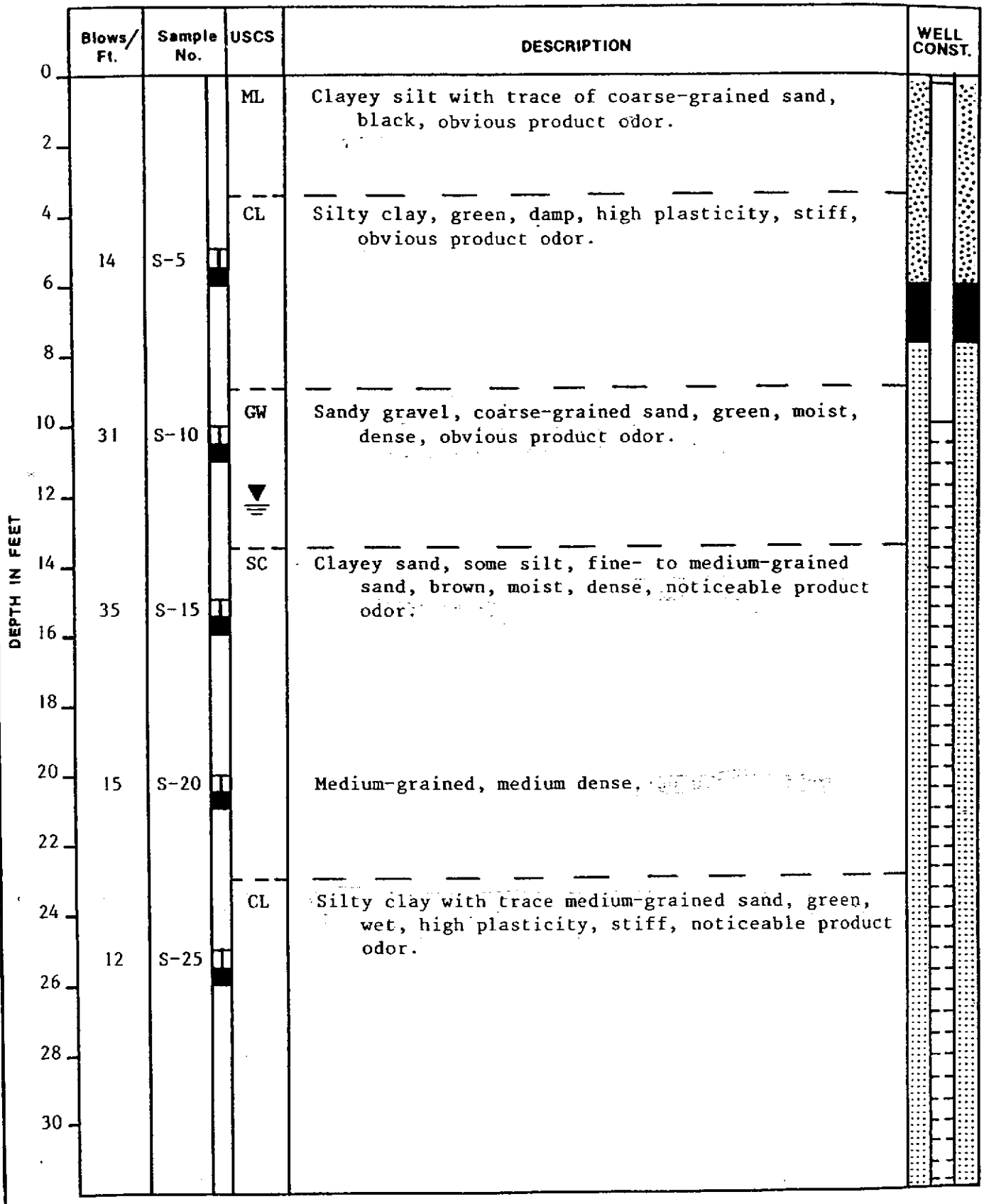
PROJECT NO. 87042-5

LOG OF BORING B-3/MW-3

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 8



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PROJECT NO. 87042-5

LOG OF BORING B-4/MW-4

Exxon Station No. 7-3006

720 High Street

Oakland, California

PLATE

P - 9

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	16	S-30	CL	Silty clay, brown, moist, high plasticity, stiff.	
32					
34					
36	20	S-35			
38				Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	
40					

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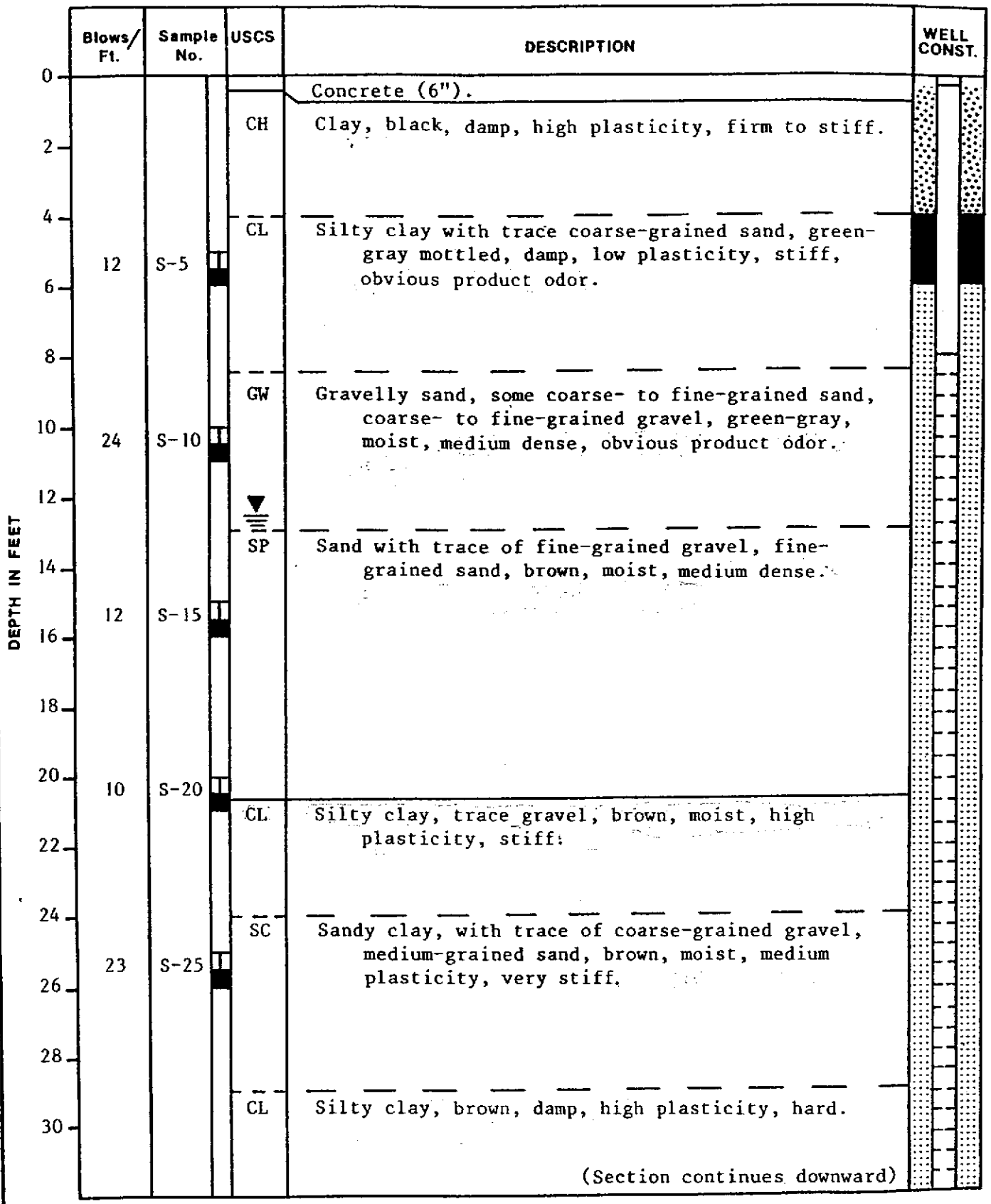
PROJECT NO. 87042-5

LOG OF BORING B-4/MW-4

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 10



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PROJECT NO. 87042-5

LOG OF BORING B-5/MW-5

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 11

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	33	S-30	CL	Silty clay, brown, damp, high plasticity, hard.	
32					
34					
36	29	s-35			
38				Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	
40					

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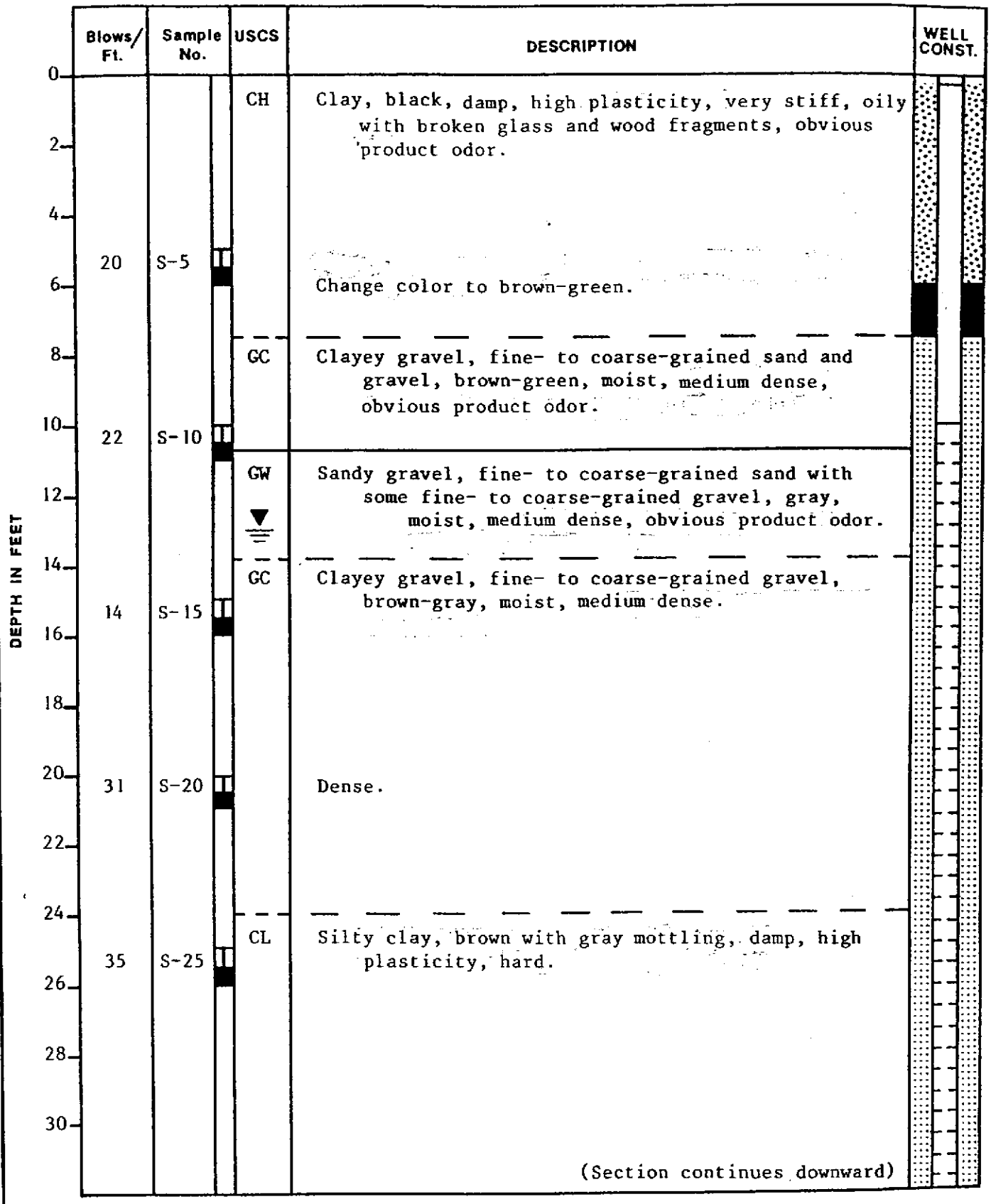
PROJECT NO. 87042-5

LOG OF BORING B-5/MW-5

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 12



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PROJECT NO. 87042-5

LOG OF BORING B-6/MW-6

Exxon Station No. 7-3006

720 High Street

Oakland, California

PLATE

P - 13

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
19	S-30	CL	Silty clay, brown, damp, high plasticity, very stiff.	
15	S-35			
			Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	

DEPTH IN FEET

30
32
34
36
38
40

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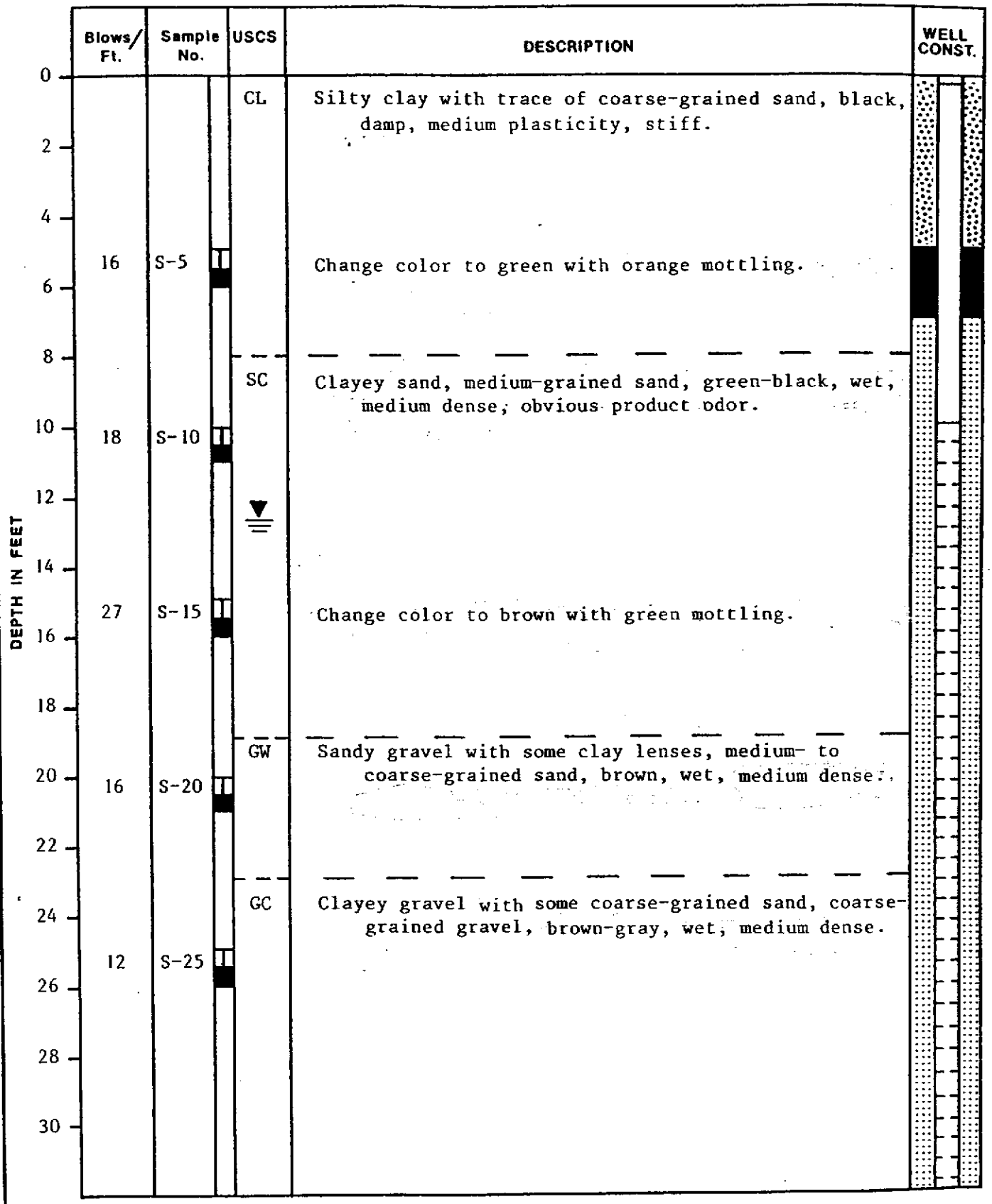
PROJECT NO. 87042-5

LOG OF BORING B-6/MW-6

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 14



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PROJECT NO. 87042-5

LOG OF BORING B-7/MW-7

Exxon Station No. 7-3006

720 High Street

Oakland, California

PLATE

P - 15

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
16	S-30	GC	Clayey gravel, fine-grained gravel and clay, brown-white, moist, low plasticity, very stiff.	
20	S-35	CL	Silty clay, brown, damp, high plasticity, very stiff	
			Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	

DEPTH IN FEET

30 32 34 36 38 40

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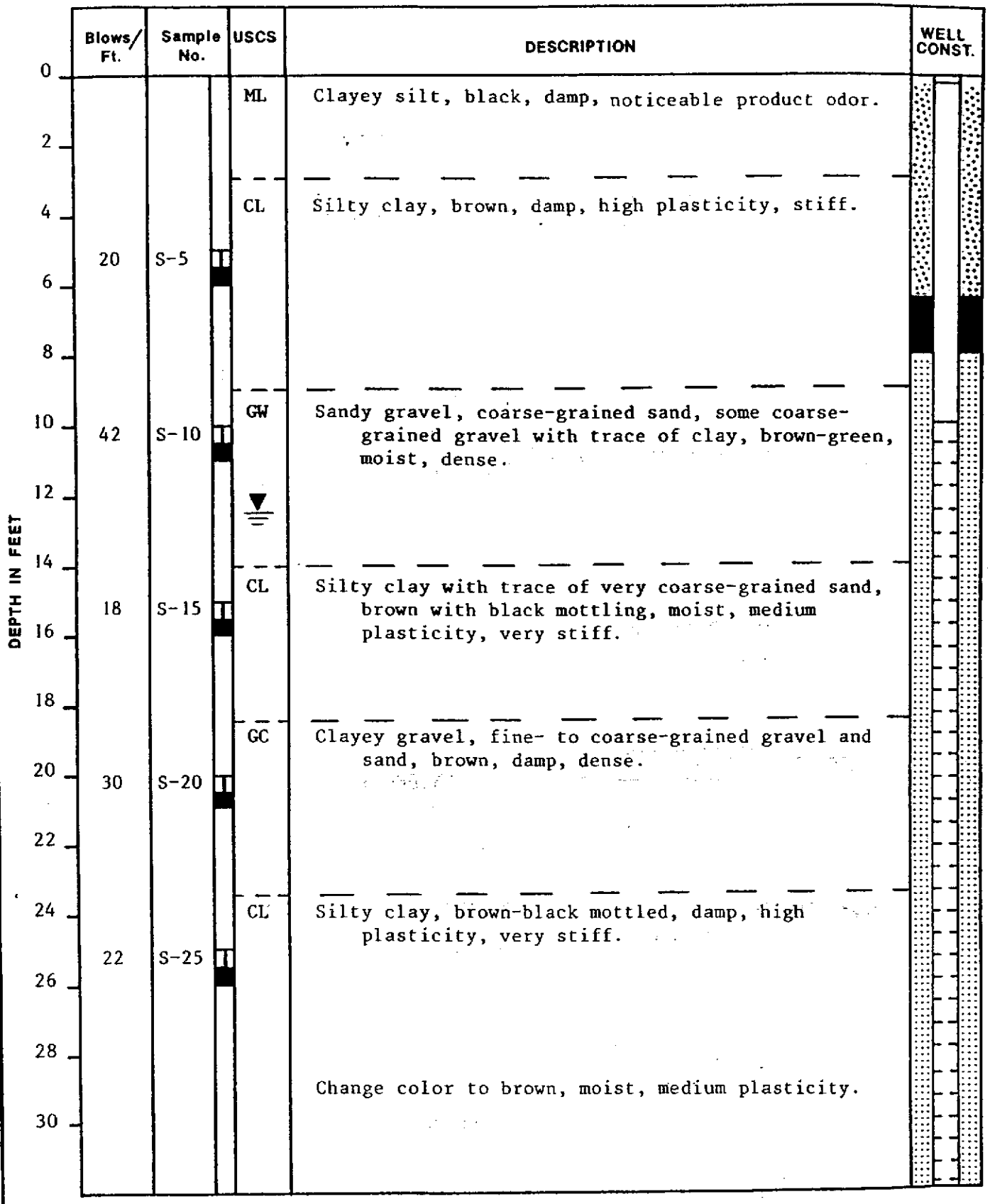
PROJECT NO. 87042-5

LOG OF BORING B-7/MW-7

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 16



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LOG OF BORING B-8/MW-8

Exxon Station No. 7-3006

720 High Street

Oakland, California

PLATE

P - 17

PROJECT NO. 87042-5

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	11	S-30	CL	Silty clay, brown, damp, high plasticity, stiff.	
32					
34	16	S-35			
36				Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below ground-water table.	
38					
40					

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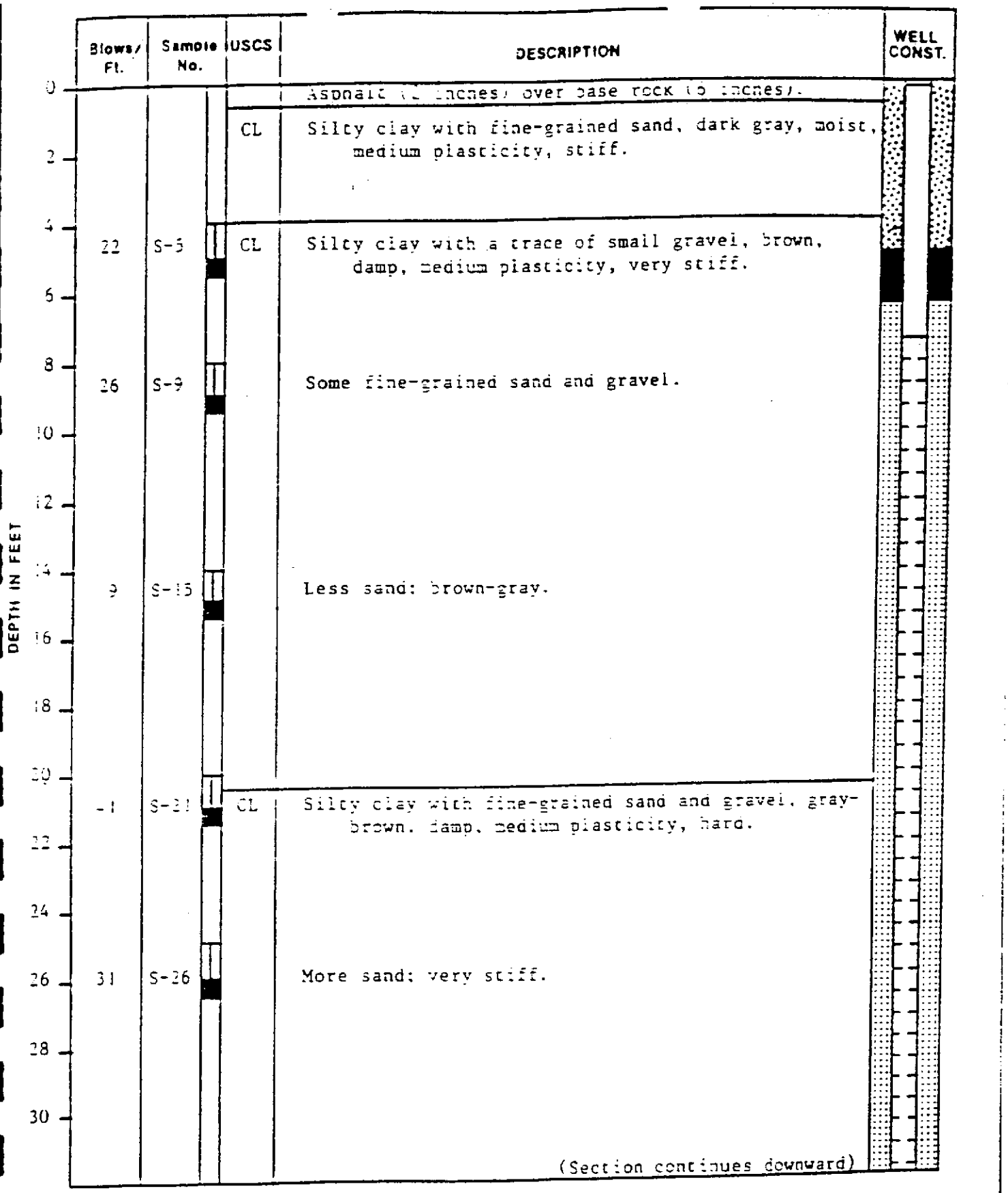
PROJECT NO. 87042-5

LOG OF BORING B-8/MW-8

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 18



LOG OF BORING B-9/MW-9

Exxon Station No. 7-3006

720 High Street

Oakland, California

PLATE P - 19

PROJECT NO. 87042-5

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
20	S-31	CL	Silty clay with fine-grained sand and gravel, gray-brown, damp, medium plasticity, stiff.	
			Total Depth = 33 feet.	

DEPTH IN FEET

30
32
34
36

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PROJECT NO. 87042-5

LOG OF BORING B-9/MW-9

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE
P - 20

Total depth of boring: 25-1/2 feet Diameter of boring: 10 inches Date drilled: 11-27-89

Casing diameter: 4 inches Length: 35 feet Slot size: 0.010-inch

Screen diameter: 4 inches Length: 10 feet Material type: Sch 40 PVC

Drilling Company: Kvilhaug Well Drilling, Inc. Driller: Rod and Mike

Method Used: Hollow-Stem Auger Field Geologist: Russell Bak

Signature of Registered Professional: _____

Registration No.: _____ State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt (3 inches) over base rock (3 feet).	
2						
4		3 8		CL	Clay, with trace gravel, gray-brown, moist, high plasticity, very stiff.	
	S-5	20	0.4			
6		8 16		GC	Gravel with clay inclusions, brown and gray with red and yellow staining, damp, hard.	
	S-7	25	0.8			
8						
		12			Grades coarse with little clay.	
10		6		ML	Silt with trace coarse sand, tan, damp, medium plasticity.	
	S-10	6	0.4			
12						
14		9 6		CL	Clay, gray-tan, damp, medium plasticity, stiff.	
	S-15	6	0.1		Grades with increasing sand.	
16						
18						
		4 6				
20	S-20	6	0.4	GC	Medium gravel, gray-brown with yellow staining, damp, medium dense.	
					(Section continues downward)	

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PROJECT NO. 87042-6

LOG OF BORING B-10/MW-10

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE C - 2

Depth	Sample No.	Blows/ft	P.I.D.	USCS Code	Description	Well Const.
				GC	Medium gravel, gray-brown with yellow staining, damp, medium dense.	
22						
					▼ Wet.	
24		15				
		17		CL	Clay, tan-brown, damp, medium to high plasticity, very stiff.	
	S-25	12	1.4			
26					Total Depth = 25-1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

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PROJECT NO. 87042-6

LOG OF BORING B-10/MW-10

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE C - 3

Total depth of boring: 30-1/2 feet **Diameter of boring:** 10 inches **Date drilled:** 11-27-89

Casing diameter: 4 inches **Length:** 30 feet **Slot size:** 0.010-inch

Screen diameter: 4 inches **Length:** 15 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Well Drilling, Inc. **Driller:** Rod and Mike

Method Used: Hollow-Stem Auger **Field Geologist:** Russell Bak

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt (3 inches) over base rock (3 feet).	
4		6 10		CL	Silty clay, gray, damp, medium plasticity, very stiff.	
	S-5	12	0	SW	Fine to coarse sand, brown with yellow and green staining, damp.	
6		3 4		CL	Silty clay, tan, damp, medium to high plasticity, stiff.	
	S-7	5	0	SP	Fine to medium sand, gray with red-brown and orange mottling, damp.	
8		5 10		GM	Gravel, gray, wet, noticeable odor.	
10	S-9.5	12	0			
12				CL	Clay, dark gray, damp, high plasticity, very stiff.	
14		4 8				
	S-15	10	1.1			
16						
18						
		5 7		▼	Fine to medium gravel with clay and fine to coarse sand, tan with gray-brown mottling, wet, dense.	
20	S-20	16	2.4	GC		

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PROJECT NO. 87042-6

LOG OF BORING B-11/MW-11

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE

C - 4

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				GC	Fine to medium gravel with clay and fine to coarse sand, tan with gray–brown mottling, wet, dense.	
24		20				
		30				
	S–25	40	0.4	SP	Medium to coarse sand, tan–brown, wet, very dense.	
26						
28						
		5		ML	Silt with trace sand, gray–tan, moist, low plasticity, stiff.	
30		7				
	S–30	15	0	CL	Clay, gray–brown, damp, high plasticity, stiff.	
					Total Depth = 30–1/2 feet.	
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

Applied GeoSystems

PROJECT NO. 87042-6

LOG OF BORING B-11/MW-11

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE

C - 5

Total depth of boring: 15-1/2 feet **Diameter of boring:** 10 inches **Date drilled:** 11-27-89

Casing diameter: 4 inches **Length:** 15 feet **Slot size:** 0.010-inch

Screen diameter: 4 inches **Length:** 10 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Well Drilling, Inc. **Driller:** Rod and Mike

Method Used: Hollow-Stem Auger **Field Geologist:** Russell Bak

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (4 inches) over base rock (1 foot).	
2				CL	Clay, dark gray, damp, medium plasticity, medium stiff.	
4		5				
		11		ML	Sandy silt, tan-gray, damp, low plasticity, very stiff.	
	S-5	17	0			
6		7				
		15				
	S-7	25	17.1	GC	Sandy clay, medium gravel, gray-brown with yellow staining, damp, very dense, noticeable odor.	
8					▼	
		7				
		17				
10	S-10	15	28.7	SP	Medium to coarse sand, dark gray, wet, dense, noticeable odor.	
12						
				ML	Sandy silt, tan-gray, damp, low to medium plasticity, very stiff.	
14		6				
		21				
	S-15	12	0.8			
16					Total Depth = 15-1/2 feet.	
18						
20						

Applied GeoSystems

PROJECT NO. 87042-6

LOG OF BORING B-12/MW-12

Exxon Station No. 7-3006
720 High Street
Oakland, California

PLATE

C - 6

Total depth of boring: 15–1/2 feet **Diameter of boring:** 10 inches **Date drilled:** 11–28–89

Casing diameter: 4 inches **Length:** 15 feet **Slot size:** 0.010–inch

Screen diameter: 4 inches **Length:** 10 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Well Drilling, Inc. **Driller:** Rod and Mike

Method Used: Hollow–Stem Auger **Field Geologist:** Russell Bak

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (3 inches) over base rock (6 inches).	
2				CL	Clay, dark gray, damp, medium plasticity, stiff.	
4		3 7				
	S–5	11	0.8	ML	Sandy silt, light and medium gray mottled, slightly damp, low plasticity, stiff.	
6		3 12				
	S–7	36	14	GM	Sandy, silty gravel, light gray with yellow staining, damp, dense, noticeable odor.	
8		6 30		▼		
10	S–10	30	48	GW	Coarse gravel, dark gray–green with yellow staining, wet, dense, noticeable odor.	
12						
				ML	Sandy silt with trace fine gravel, tan–brown, damp, low plasticity, very stiff.	
14		4 11				
	S–15	17	0.4			
16					Total Depth = 15–1/2 feet.	
18						
20						

Applied GeoSystems

PROJECT NO. 87042-6

LOG OF BORING B-13/MW-13

Exxon Station No. 7-3006
720 High Street
Oakland, California

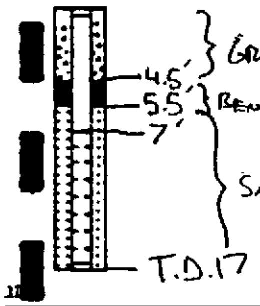
PLATE

C - 7

Applied GeoSystems

Job No.: 87042-9	Client: Exxon	Location: Oakland - High St
Drilling Method: Hollow Stem Auger		Boring No.: MW14
Drilling Company: Kvilhaug		Sheet No.: 1 of 1
Drilling Crew: Mike Joel		
Geologist: Twitty		Drilling Time:
Sampling Method: Mod. Calif. Split Spoon		Start / Finish

Water Level:					Time	Time
Time:						
Date:					Date: 10/31	Date:
Casing Depth						



10 Ft Screen
7 Ft Blank
1 Bucket Bentonite
6 Bag. Sand
1 Wood Plug
1 Slip Cap
1 Locking Cap
1 Lock-down Christy Box

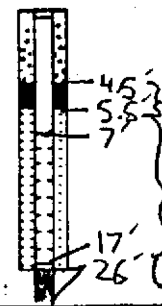
Elevation:

Sample Type	Sample Depth	Blows Per 6in.	Moisture Content	Product Odor	Depth in Feet	USCS Code	Surface Conditions: Asphalt
					0		
					1		
					2		
SS	3	5/4/5		0	3	CL	Silty Clay, High Silt, Dk. Brown/Black; Damp; Med Plastic; Med Stiff
					4		
SS	5.5	4/8/5		500	5		
					6		Silty Clay; Brown; Moist; Med Plastic; Stiff; Strong Odor
					7	∇	
SS	8	7/14/23		200	8	GC	Clayey Gravel w/some sand; Dk Brown & Grey; Moist; Med-Low Plastic; Med Dense
					9		
					10		
SS	10.5	6/14/21		>1000	1		As above; Strong Odor
					2		
					3		Sand-Gravel-Clay; Grey & Orange/Red; Wet; Med Dense
SS	13	14/25/18		466	4	GC	
					15	SM	Coarse Sand w/some Gravel & Trace Clay; Orange; Wet
SS	15.5	13/6/6		333	6	CL	Silty Clay; Brown; Moist; Med Plastic; Med Stiff
					7		
SS	18	3/4/5		>1000	8	T.D.	Silty Clay; Green Discoloration; Moist; Med Plastic; Med Stiff; Very Strong Odor
					9		
					20		

Applied GeoSystems

Drilling Method: Hollow Stem Auger	Boring No.: MW15
Drilling Company: Kvilhaug	Sheet No.: 1 of 2
Drilling Crew: Mike & Joel	
Geologist: TWHD	Drilling Time:
Sampling Method: Mod. Calif. Split Spoon	Start / Finish

Water Level:					Time	Time
Time:						
Date:					Date: 10/31	Date:
Casing Depth						



10' Screen
7' Blank
1 Bucket Bentonite
Bags Bentonite Chips
Bags Sand
1 Wooden Plug
1 Slip Cap
1 Locking Cap
Lock-down Christy Box

Grout (0–4.5'); Bentonite (4.5'–5.5'); Grout (7'–17'); (9' Bentonite) 26'

Datum: Elevation:

Surface Conditions: Asphalt

Recovery	Sample Type	Sample Depth	Blows Per 6in.	Moisture Content	Product Odor	Depth in Feet	USCS Code	Description
						0		
						1		
						2		
18	SS	3.5	5/6/6		0	3	ML	
						4		Clayey Silt; Dk. Brown/Black; Damp; No to Low Plastic; Med Stiff
						5		
18	SS	6	3/4/12		0	6	CL	Silty Clay; Brown w/ Grey Blotches; Damp; Med Plastic; Stiff
						7		
						8	CL	As above w/ Strong Product Odor; Very Moist
18	SS	8.5	7/11/17		800	9	▽	
						10		
18	SS	11	15/21/25		>1000	11	GC	Gravel-Sand-Clay; Gravel Very Coarse; Brown & Grey w/ Red & Orange Inclusions; Wet; Med. Dense; Very Strong Odor
						12		
						13	CL	Silty Clay w/ Trace Gravel & Sand; Brown; Moist; Med Plastic; Stiff
18	SS	13.5	4/11/11		0	14		
						15		
18	SS	16	3/4/5		0	16		As above; No Gravel
						17		
18	SS	18.5	4/7/12		0	18		
						19		As above
						20		

ATTACHMENT B

FIELD PROTOCOL

FIELD PROTOCOL - WELL DESTRUCTION

Site Safety Plan

Field work will be performed by ERI personnel in accordance with a Site Safety Plan developed for the site. This plan describes the basic safety requirements for the subsurface investigation and the drilling of soil borings at the work site. The Site Safety Plan is applicable to personnel and subcontractors of ERI. Personnel at the site are informed of the contents of the Site Safety Plan before work begins. A copy of the Site Safety Plan is kept at the work site and is available for reference by appropriate parties during the work. The ERI geologist will act as the Site Safety Officer.

Well Destruction

Prior to drilling, ERI will acquire necessary permits from the appropriate agency (ies).

A California-licensed well driller will be subcontracted to destroy the wells at the subject site. An ERI representative will be on site to observe well destruction activities. Each well will be measured to verify the well depth and the well vaults will be removed. The wells will be pressure grouting to approximately 2 feet below grade surface (bgs). Then the top two feet of casing, seal, and filter pack, will be removed in accordance with County requirements. The well vaults and drill cuttings will be stockpiled on site on plastic sheeting and covered, pending appropriate disposal. Each well location will be resurfaced to match the existing surface.

ERI's representative will collect one composite sample (4 brass sleeves) from the soil stockpile for disposal profiling. The stockpile sample will be sealed promptly with Teflon® tape and plastic caps. The sample will be labeled and placed in iced storage for transport to the laboratory. A Chain of Custody Record will be initiated by the geologist in the field, updated throughout handling of the sample, and sent with the sample to the laboratory. A copy of this record will be in the final report.

After completion of the work, ERI will prepare a letter report documenting the destruction of the wells.