July 23, 2007
Project No. SJ115-5P1-X
SAP: 135441

Mr. Jerry Wickham
Alameda County Health Care Services Agency
Environmental Health Services – Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Well Destruction Report
Former Shell Service Station
1155 Portola Avenue
Livermore, California

DELTA

Dear Mr. Wickham:

Delta Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared this letter documenting the destruction of four monitoring wells (MW-1, MW-2, MW-3 and MW-4) associated with the above referenced site (Figure 1). Former well locations are shown on Figure 2.

WELL DESTRUCTIONS

Delta requested case closure from Alameda County Environmental Health Services Agency (ACEH) in a letter report dated November 17, 2006. In a letter dated April 3, 2007, ACEH concurred that no further action was necessary at the site, and requested that all site monitoring wells be properly destroyed. In order to destroy wells, Delta obtained well destruction permits from Zone 7 Water Agency (Zone 7). Copies of the permits are provided as Attachment A. The four monitoring wells were destroyed on May 29, 2007 utilizing methods authorized by Zone 7. Test America Drilling (Test America), License C57-819548, provided the field equipment and materials. A Delta geologist oversaw and directed the well destruction activities.

Prior to destruction, each well was gauged and sounded to verify the wells were clear of debris or other material. Well gauging information is provided in Table 1. Original well construction logs are provided in Attachment A.

A tremie pipe with attached hose was placed down the top of each well and cement grout was pumped into the well-casing to within 0.5-foot below grade (bg). The tremie pipe and hose was then pulled from the well and a steel fitting with hose connector was attached to the wellhead. The grout hose was connected to the fitting and grout was pumped into the well under 25 pounds per square inch (psi) of pressure for approximately 10 minutes. The upper casing of each well was then drilled out to a depth of two feet bg. The remaining borehole was then grouted to within 1-foot of the ground surface, and capped with concrete to match the surrounding grade. Delta prepared

State of California Department of Water Resources (DWR) *Well Completion Reports* for each well and submitted them to Test America for signatures, prior to submittal to the appropriate agency. Copies of the Well Completion Reports are presented in Attachment C.

REMARKS

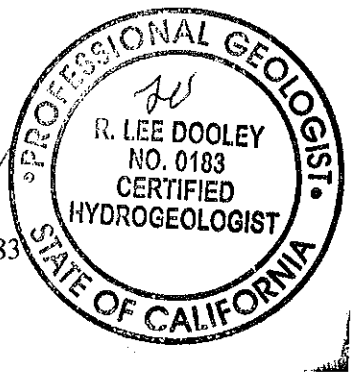
The information contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

Please call Lee Dooley at (408) 826-1880 if you have any questions regarding the contents of this letter.

Sincerely,
Delta Consultants, Inc.

Sean Gehlke
Staff Geologist

Lee Dooley, CHG 0183
Project Manager



Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map

Table 1 – Final Well Gauging Data

Attachment A – Zone 7 Water Agency - Well Destruction Permits
Attachment B – Well Construction Logs
Attachment C – California Department of Water Resources - Well Completion Reports

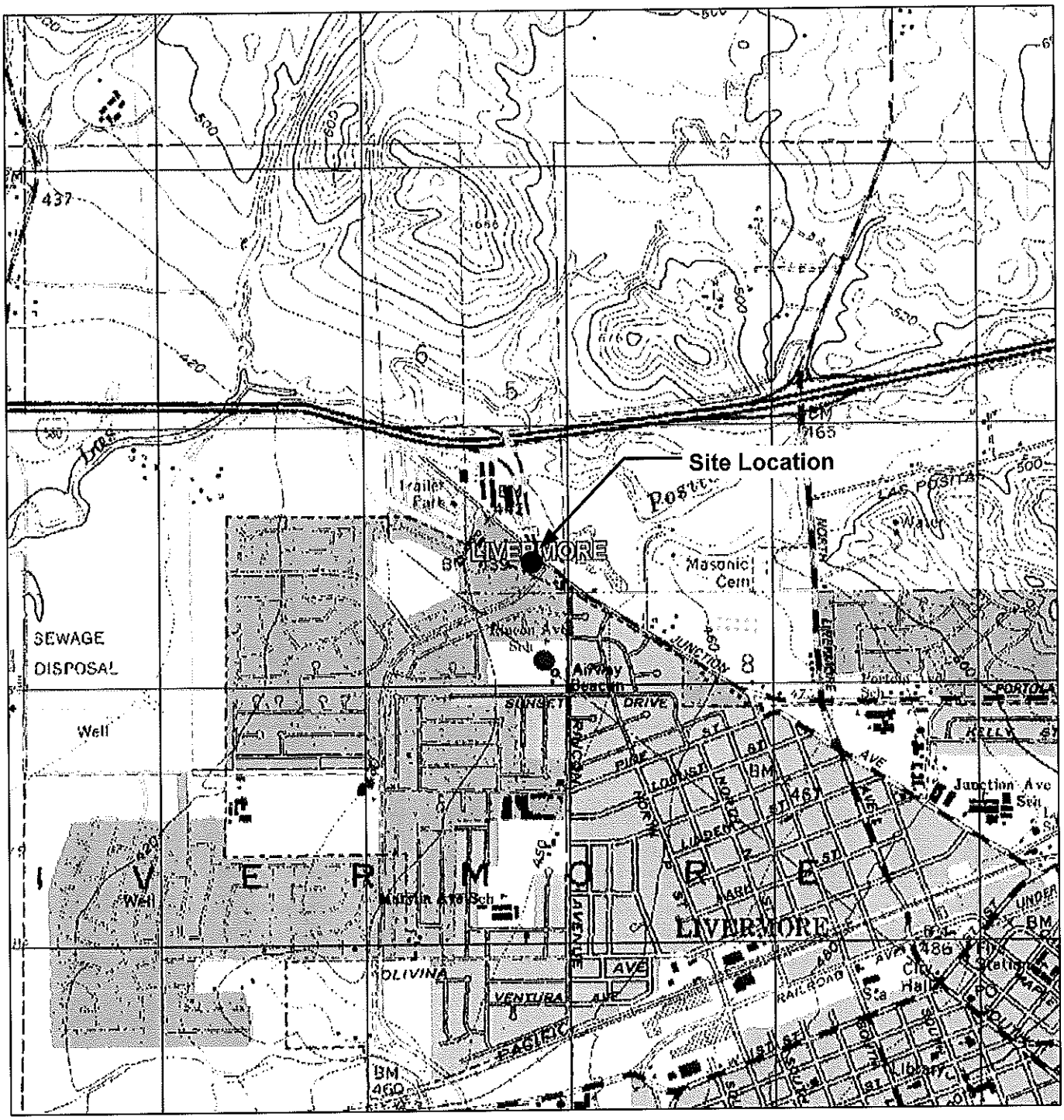
cc: Denis Brown, Shell Oil Products US (pdf by email)
Danielle Stefani, Livermore-Pleasanton Fire Department, Livermore
Terrell and Kimberley Bass, Danville
Wyman Hong, Zone 7 Water Agency

Tables

Table 1
Final Well Gauging Data
Former Shell Service Station
1155 Portola Avenue
Livermore, CA

Well ID #	Date	Depth to Water (feet)	Total Depth (feet)
MW-1	5/29/2007	37.4	59.2
MW-2	5/29/2007	38.4	59.2
MW-3	5/29/2007	37.7	55.0
MW-4	5/29/2007	38.2	59.2

Figures



GENERAL NOTES:
Base Map from: DeLorme Yarmouth, ME 04096
Source Data: USGS

North

QUADRANGLE LOCATION

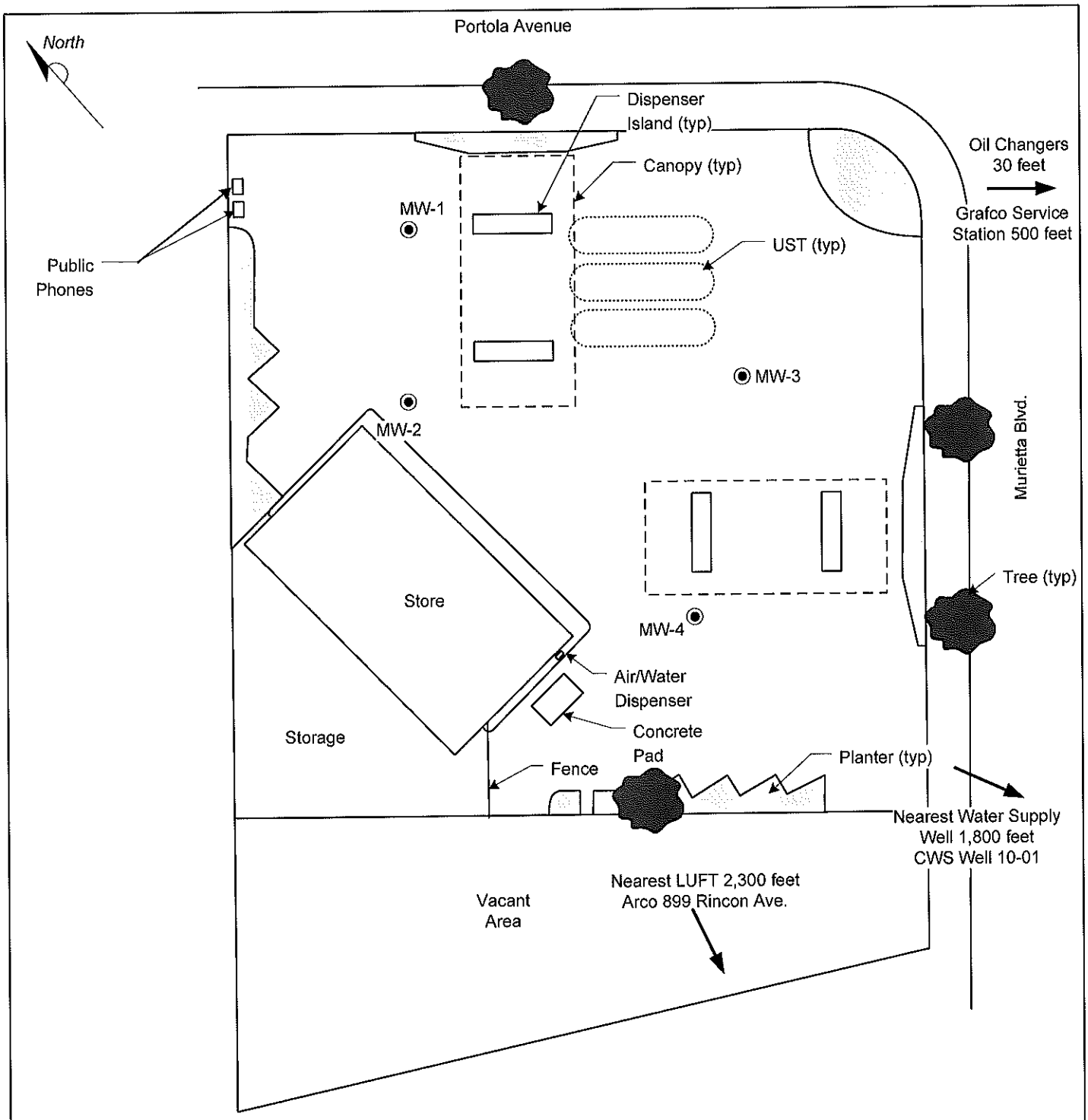
0 1,800 3,600
Scale, Feet

FIGURE 1
SITE LOCATION MAP

FORMER SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2005	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.2005	PREPARED BY VF
REVISION NO.	REVIEWED BY

Delta
Environmental
Consultants, Inc.



LEGEND

MW-4 ◉ **GROUNDWATER MONITORING WELL**

0 30 FT

APPROX. SCALE

SITE MAP

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2005	DRAWN BY JL 11/23/05
FILE NO. SJ11-55P-1.2005	PREPARED BY JL
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

Attachment A

ZONE 7 WATER AGENCY – WELL DESTRUCTION PERMITS

ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 454-5728

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1155 Portola Avenue
Livermore, CA 94550

California Coordinates Source _____ ft. Accuracy _____ ft.
CCN _____ ft. CCE _____ ft.
APN 99-130-4-11

CLIENT
Name Denis Brown - Shell OPUS
Address 20945 S. Wilmington Ave. Phone _____
City Carson, CA Zip 90810-1039

APPLICANT
Name Lee Dooley - Delta Consultants Fax 408-225-8506
Address 175 Bernal Road, Suite 200 Phone 408-826-1888
City San Jose, CA Zip 95119

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	••	General	••
Water Supply	••	Contamination	••
Monitoring	••	Well Destruction	X

PROPOSED WELL USE

New Domestic	••	Irrigation	••
Municipal	••	Remediation	••
Industrial	••	Groundwater Monitoring	••
Dewatering	••••••••••••••	Other _____	••••

DRILLING METHOD:

Mud Rotary	••	Air Rotary	••	Hollow Stem Auger	••
Cable Tool	••	Direct Push	••	Other _____	••••

DRILLING COMPANY Test America Drilling
DRILLER'S LICENSE NO. C57-819548

WELL PROJECTS
Drill Hole Diameter _____ in. Maximum Depth 61 ft.
Casing Diameter 2 in. Number 4
Surface Seal Depth _____ ft. (MW-1 TO MW-4)

SOIL BORINGS
Number of Borings _____ Maximum Depth _____ ft.
Hole Diameter _____ in.

ESTIMATED STARTING DATE 6/4/07 5/29/05
ESTIMATED COMPLETION DATE 6/5/07 5/30/05

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 5/9/07
CHG 0183

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 27096
WELL NUMBER 3S/2E-5N7 to 5N10 (MW-1 to MW-4)
APN 099-0130-004-11

PERMIT CONDITIONS

(Circled Permit Requirements Apply)

(A) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

(F) WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after the completion of permitted work the well installation report Including all soil and water laboratory analysis results.

Approved [signature] Wyman Hong Date 5/24/07

Revised: April 27, 2005

May 24, 2007

Zone 7
Water Resources Engineering
Groundwater Protection Ordinance

Shell Oil Products
1155 Portola Avenue
Livermore
Wells 3S/2E-5N7 to 3S/2E-5N10 (MW-1 to MW-4)
Permit 27096

Preliminary Destruction Requirements:

1. Remove from the well any pump, appurtenances, debris, or other materials.

2. Sound the well as deeply as practicable and record for your report.

3. Fill casing with neat cement or cement grout sealing material to two feet below the finished grade and pressurize to 25 psi and maintain for 10 minutes, forcing the sealing material through the existing perforations and into the surrounding formation.

4. Release the pressure and refill the empty portion of the casing with grouting material allowing it to spill over the top of the casing to form a cap.

5. Cut and remove any casing(s) to two feet below the finished grade or original ground, whichever is the lower elevation.

6. After seal has set, backfill the remaining hole with compacted material.

Attachment B

WELL CONSTRUCTION LOGS

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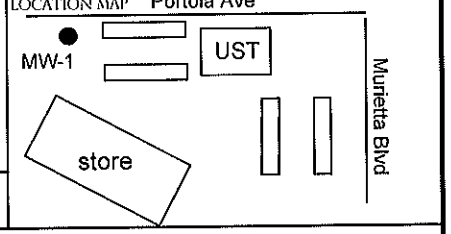
PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS	BORING/WELL NO:	MW-1
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore	PAGE	1 OF 3
DRILLER:	Gregg Drilling	DATE DRILLED:	10/22/2002		
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"		
SAMPLING METHOD:	SS	HOLE DEPTH:	59'		
CASING TYPE:	PVC	WELL DIAMETER:	2"		
SLOT SIZE:	0.020"	WELL DEPTH:	59'		
GRAVEL PACK:	2/12	CASING STICKUP:	0		
ELEVATION		NORTHING		EASTING	

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement-Grout								AF	Asphalt 5"
		damp		Air Knifed	1			GC	**Clayey GRAVEL**; brown with lighter brown, black and gray mottling, 70% subrounded gravels, 25% medium plasticity fines, 5% fine sand
		damp			2				
					3				
		damp			4			GC	**Clayey GRAVEL with Sand**; dark brown, 50% subangular gravels up to 2",, 25% sand, 25% medium plasticity fines, well graded
		damp			5			GW	**Well Graded GRAVEL with Sand**; brown, 80% subrounded gravels, 15% sand, 5% medium plasticity fines
					6				
		damp			7			GC	**Clayey GRAVEL with Sand**; brown, 65% subangular gravels, 20% sand, 15% medium plasticity fines
					8				
					9				
				18	10			GW-GC	**Well Graded GRAVEL with Clay and Sand**; brown, 60% subangular-subrounded gravel, 30% fine to coarse sand, 10% fines
		damp	2.7	19	11				
				21	12				
					13				
					14				
				36	15			SC	**Clayey SAND with Gravel**; medium brown, 45% fine to coarse sand, 40-45% fine gravel, 10-15% fines
		damp/ moist	1.5	29	16				
				19	17				
					18				
					19				
				6	20				
		damp/ moist	2.3	12	21			CL	**Sandy Lean CLAY**; medium brown with light brown mottling, 65% low to medium plasticity fines, 35% fine sand
				23	22				

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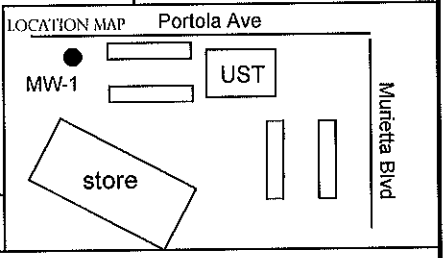
PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/22/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	59'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	59'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-1

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement Grout / Bentonite / Sand					23		CL	continued
					24			plasticity fines, 5% fine sand
		damp	3.2	16 23 50	25 26		SW	**Well Graded SAND with Gravel**; brown, 55% very well graded fine to coarse sand, 40% gravel, 5% fines
					27 28 29			
		very moist	5.5	34 50/6	30 31		GC	**Clayey GRAVEL with Sand**; brown, 50% fractured gravel, 35% fine to coarse sand, 15% medium plasticity fines, occasional highly weathered (FeO) fractured gravel
					32 33 34 35 36 37 38 39			
		moist/ damp	6.8		40 41		GW-GC	**Well Graded GRAVEL with Clay and Sand**; brown, 65% fine and coarse subrounded gravel, 25% fine to coarse sand, 10% medium plasticity fines
					42 43 44			

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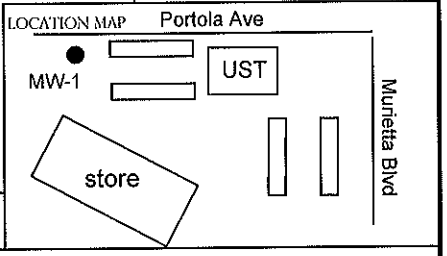
PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS	BORING/WELL NO:	MW-1
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore	PAGE	3 OF 3
DRILLER:	Gregg Drilling	DATE DRILLED:	10/22/2002		
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"		
SAMPLING METHOD:	SS	HOLE DEPTH:	59'		
CASING TYPE:	PVC	WELL DIAMETER:	2"		
SLOT SIZE:	0.020"	WELL DEPTH:	59'		
GRAVEL PACK:	2/12	CASING STICKUP:	0		
ELEVATION		NORTHING		EASTING	

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand	▽	very moist/ wet	3.5	22 50/6	45 46		AF GW-GC	cont. (grades finer) plasticity fines, 5% fine sand
		damp			47		CL	**Lean CLAY with Sand**; medium brown, 65% medium plasticity fines, 25% fine sand, 10% gravel
					48 49			
		wet	1.3	25 50/6	50 51		SP	**Poorly Graded SAND with Gravel**; dark brown, 60% coarse sand, 40% fine gravel, <5% fines
		wet			52			(increase in fines)
		v. moist wet		30 50/6	53 54		GC	**Clayey GRAVEL with Sand**; medium brown, 50% fine to coarse gravel, 40% fine to coarse sand, 10% medium plasticity fines
		v. moist/ wet		36 50/6	55			
		wet	1.1	36 50/6	56 57			
		damp-moist			58 59		CL	**Sandy Lean CLAY**; brown, 55% medium plasticity fines, 45% fine sand
					60			**BOTTOM OF BORING @ 59 ft**
					61 62 63 64 65 66			

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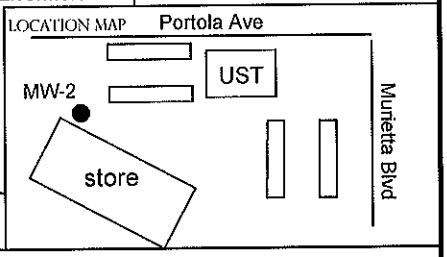
PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	60'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	60'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-2
PAGE 1 OF 3

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement-Grout								AF	Asphalt 5"
		damp		Air Knifed	1			CL	**Gravelly Lean CLAY**; brown, 60% medium plasticity fines, 30% gravels, 10% sand, well graded
		damp			2			CL	**Lean CLAY with Sand**; brown, 80% medium plasticity fines, 20% fine sand, poorly graded
		damp			3			GM	**Silty GRAVEL**; brown, 50% subrounded gravels, 30% medium plasticity fines, 10% fine sand
		damp			4			GC	**Clayey GRAVEL**; brown, 75% subrounded gravels up to 2", 15% medium plasticity fines, 10% sand
					5				
					6				
		damp			7			GW-GC	**Well Graded GRAVEL with Clay and Sand**; brown, 60% fine gravels, 30% sand, 10% medium plasticity fines
		damp-moist			8				
					9				
		damp-		10	10				
		moist	7.4	10	11			CL	**Lean CLAY with Sand**; 75% medium plasticity fines, 25% fine sand
		damp		11	12				
					13				
					14				
				10	15			SP-SC	**Poorly Graded SAND with Clay and Gravel**; brown, 60% coarse sand, 30% fine gravel, 10% medium plasticity fines, occasional FeO coating on gravel
		damp-	1.3	11	16				
		moist		20	17				
					18				
					19				
				12	20			CL	**Lean CLAY with Sand**; reddish brown to brown, 80% medium plasticity fines, 15% fine sand, <5% fine gravel, hard
		damp	3.7	15	21				
				24	22				

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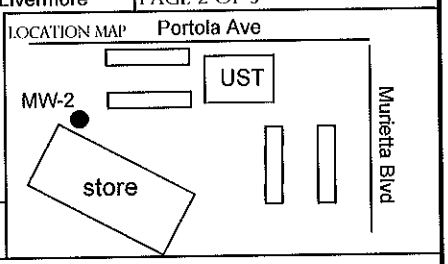
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	60'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	60'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-2
PAGE 2 OF 3

LOCATION MAP



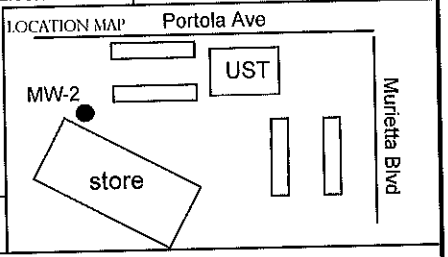
Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement Grout					23		CL	continued
					24			
		very moist	4.2	40 32 36	25		GC	**Clayey GRAVEL with Sand**; brown, 45% fine gravel, 35% fine to coarse sand, 20% medium plasticity fines
					26			
					27			
					28			
					29			
		very moist	2.6		30			
					31			
					32			
					33			
					34			
					35			
Bentonite		very moist			36			
					37			
					38			
					39			
Sand		very moist	3.7		40		SP-SC	**Poorly Graded SAND with Clay and Gravel**; brown, 60% coarse sand, 30% fine gravel, 10% medium plasticity fines, free water on coarse sand and gravel
					41			
					42			
					43			
					44			

KHM
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	60'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	60'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-2
PAGE 3 OF 3

LOCATION MAP

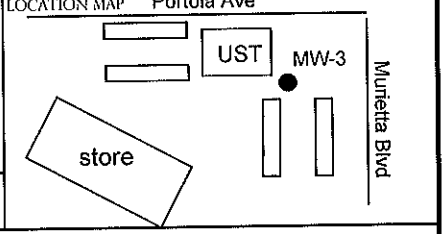


Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand		very moist	4.4	30 50/6	45–49		GP	**Poorly Graded GRAVEL with Sand**; medium brown, 55% subrounded gravel, 40% coarse sand, 5% fines, free water on sand and gravel
		very moist to wet		40 50/6	50–53			(increase in free water on sand and gravel surfaces)
		wet			54			
		wet			55–56			
		wet			57–59			
					60			**BOTTOM OF BORING @ 60 ft**
					61–66			

KHM
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS	BORING/WELL NO:	MW-3
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore	PAGE	1 OF 3
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002		
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"		
SAMPLING METHOD:	SS	HOLE DEPTH:	55'		
CASING TYPE:	PVC	WELL DIAMETER:	2"		
SLOT SIZE:	0.020"	WELL DEPTH:	55'		
GRAVEL PACK:	2/12	CASING STICKUP:	0		
ELEVATION		NORTHING		EASTING	

LOCATION MAP



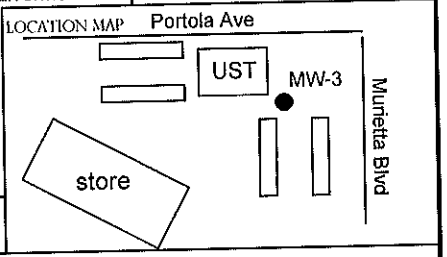
Well Completion: Backfill / Casing	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample: Recovery / Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement Grout		dry-damp		Air Knifed	1		AF	Asphalt 5"
							GC	**Clayey GRAVEL with Sand**; brown with dark grey mottling,
					2			60% subrounded gravels, 25% sand, 15% fines
		dry-damp					GW	**Well Graded GRAVEL with Sand**; brown, 80%
					3			subrounded gravels up to 2", 15% sand, 5% medium
		dry-damp						plasticity fines
					4			
					5		GW-GM	**Well Graded GRAVEL with Silt and Sand**; dark brown,
		dry-damp		9				70% subrounded gravel, 20% fine to coarse sand, 10%
				23	6			fines
		dry		41				
					7			
					8			
					9			
					10			
				26				
		damp	4.9	26	11			
				14				
					12			
					13			
					14			
					15		GC	**Clayey GRAVEL with Sand**; brown, 70% gravel,
				27				15% fine to coarse sand, 15% medium plasticity fines,
		damp	1.6	50/6	16			occasional FeO stains
					17			
					18			
					19			
					20		GP	**Poorly Graded GRAVEL**; light grey to brown, 95% gravel
		dry	4.3	50/6	21			
					22			

KHM
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	55'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	55'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-3
PAGE 2 OF 3

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement-Grout					23		GP	continued
					24			
		damp-moist	1.6	11 15 23	25		GC	**Clayey GRAVEL with Sand**; medium brown, 45% subrounded gravel, 35% medium plasticity fines, 20% fine to coarse sand
					26			
					27			
					28			
					29			
		very moist	4.3	50/6	30			
					31			
					32			(increase in coarse subrounded sand, abundant fractured gravel, free water on sand and gravel surfaces)
					33			
					34			
		very moist	5.0	43 16 27	35			(occasional highly FeO weathered gravel, free water on coarse sand and gravel)
					36			
					37			
Bentonite		damp		9 9 50	38		CL	**Lean CLAY with Sand**; light grey with FeO mottling, 85% medium plasticity fines, 15% fine sand
					39			
			2.3		40		GP-GC	**Poorly Graded GRAVEL with Clay and Sand**; medium brown, 55% gravel, 35% coarse sand, 10% medium plasticity fines, occasional FeO weathered and fractured gravel
		very moist		20 50/6	41			
					42			
Sand					43			
	▽	wet		5 10	44			

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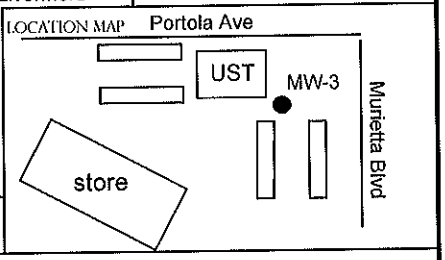
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/21/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	55'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	55'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-3
PAGE 3 OF 3

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand		wet	2.2	8 40 50	45–48		GP-GC	cont.
		wet			47–48			
		moist			48–50		GC	**Clayey GRAVEL with Sand**; 40% gravel, 40% fine to coarse sand, 20% medium plasticity fines
		wet		50/6	50–55		GW-GC	**Well Graded GRAVEL with Clay and Sand**; 45% gravel, 45% fine to coarse sand, 10% medium plasticity fines
		wet			53–54			
					55			**BOTTOM OF BORING @ 55 ft**
					56–66			

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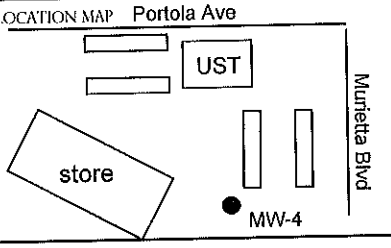
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/23/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	61'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	61'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-4
PAGE 1 OF 3

LOCATION MAP Portola Ave



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement Grout		dry-damp		Air Knifed	1			AF	Asphalt 5"
								GW	**Well Graded GRAVEL with Sand**; brown, 85% subangular gravels, 15% coarse sand
		damp			2			SC	**Clayey SAND with Gravel**; brown, 65% sand, 20% subrounded gravels, 15% medium plasticity fines
					3				
		damp			4			GW-GC	**Well Graded GRAVEL with Clay**; brown, 80% subrounded gravels, 10% sand, 10% medium plasticity fines
		damp			5			GW	**Well graded GRAVEL with Sand**; brown, 85% subrounded gravels, 15% sand
					6				
		damp			7				(grades finer, 5% medium plasticity fines)
					8				
					9				
					10			SM	**Silty SAND**; light brown with dark brown mottling, 45% low plasticity fines, 55% fine sand, abundant rootholes
		damp-dry	4.7		11				
					12				
					13				
					14				
				12	15				(occasional coarse sand)
		damp	7.1	15	16				
				19	17				
					18				
					19				
				20	20			GC	**Clayey GRAVEL with Sand**; brown, 55% subangular gravel, 25% fine to coarse sand, 20% medium plasticity fines
		damp-moist		23	21				
				29	22				

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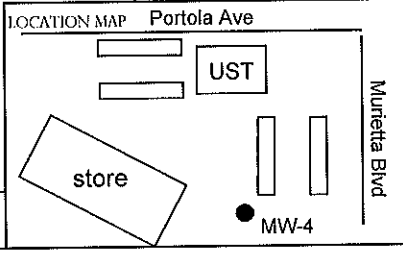
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS	BORING/WELL NO:	MW-4
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore	PAGE	2 OF 3
DRILLER:	Gregg Drilling	DATE DRILLED:	10/23/2002		
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"		
SAMPLING METHOD:	SS	HOLE DEPTH:	61'		
CASING TYPE:	PVC	WELL DIAMETER:	2"		
SLOT SIZE:	0.020"	WELL DEPTH:	61'		
GRAVEL PACK:	2/12	CASING STICKUP:	0		
ELEVATION		NORTHING		EASTING	

LOCATION MAP



Well Completion: Backfill / Casing	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample: Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Cement Grout					23		GC	cont.
					24			
		damp-moist	4.3	50/6	25			(FeO staining in gravel)
					26			
					27			
					28			
					29			
		very moist	3.6	24 50	30		GW-GC	**Well Graded GRAVEL with Clay and Sand**; 60% subangular gravel, 30% fine to coarse sand, 10% medium plasticity fines, occasional FeO staining in gravel
					31			
					32			
					33			
					34			
					35			
					36			
					37			
					38			
Bentonite					39			
		dry		50/6	40		GP	**Poorly Graded GRAVEL**; light grey, 95% subangular gravel at least 2", < 5% sand, <5% fines
					41			
Sand					42			
					43			
					44			

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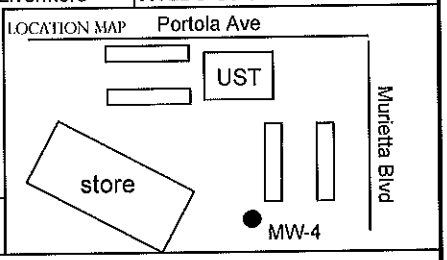
ENVIRONMENTAL MANAGEMENT INCORPORATED

PROJECT NO:	C81-1155 Portola	CLIENT:	Shell OPUS
LOGGED BY:	J. Yantis	LOCATION:	1155 Portola Rd., Livermore
DRILLER:	Gregg Drilling	DATE DRILLED:	10/23/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	8"
SAMPLING METHOD:	SS	HOLE DEPTH:	61'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.020"	WELL DEPTH:	61'
GRAVEL PACK:	2/12	CASING STICKUP:	0
ELEVATION		NORTHING	EASTING

BORING/WELL NO: MW-4
PAGE 3 OF 3

LOCATION MAP



Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand	▽	very moist to wet	1.4	31 50/6	45–50		GP	cont.
					50–51		GW-GC	**Well Graded GRAVEL with Clay and Sand**; brown with faint MnO staining, 70% subrounded gravel, 20% fine to coarse sand, 10% medium plasticity fines
					51–55			
		wet	2.5		55–59		GW	**Well Graded GRAVEL with Sand**; brown, 60% fine to coarse subangular gravel, 35% fine to coarse sand, 5% fines
		very moist			59–60		SM	**Silty SAND**; dark brown, 55% fine sand with dark brown bedding planes, 45% non-plastic to low plasticity fines,
		wet			60–61		SW	**Well Graded SAND**; dark brown, 95% fine to coarse sand, <5% fines, rare gravel
					61–66			**BOTTOM OF BORING @ 61 ft**

Attachment C

California Department of Water Resources
Well Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

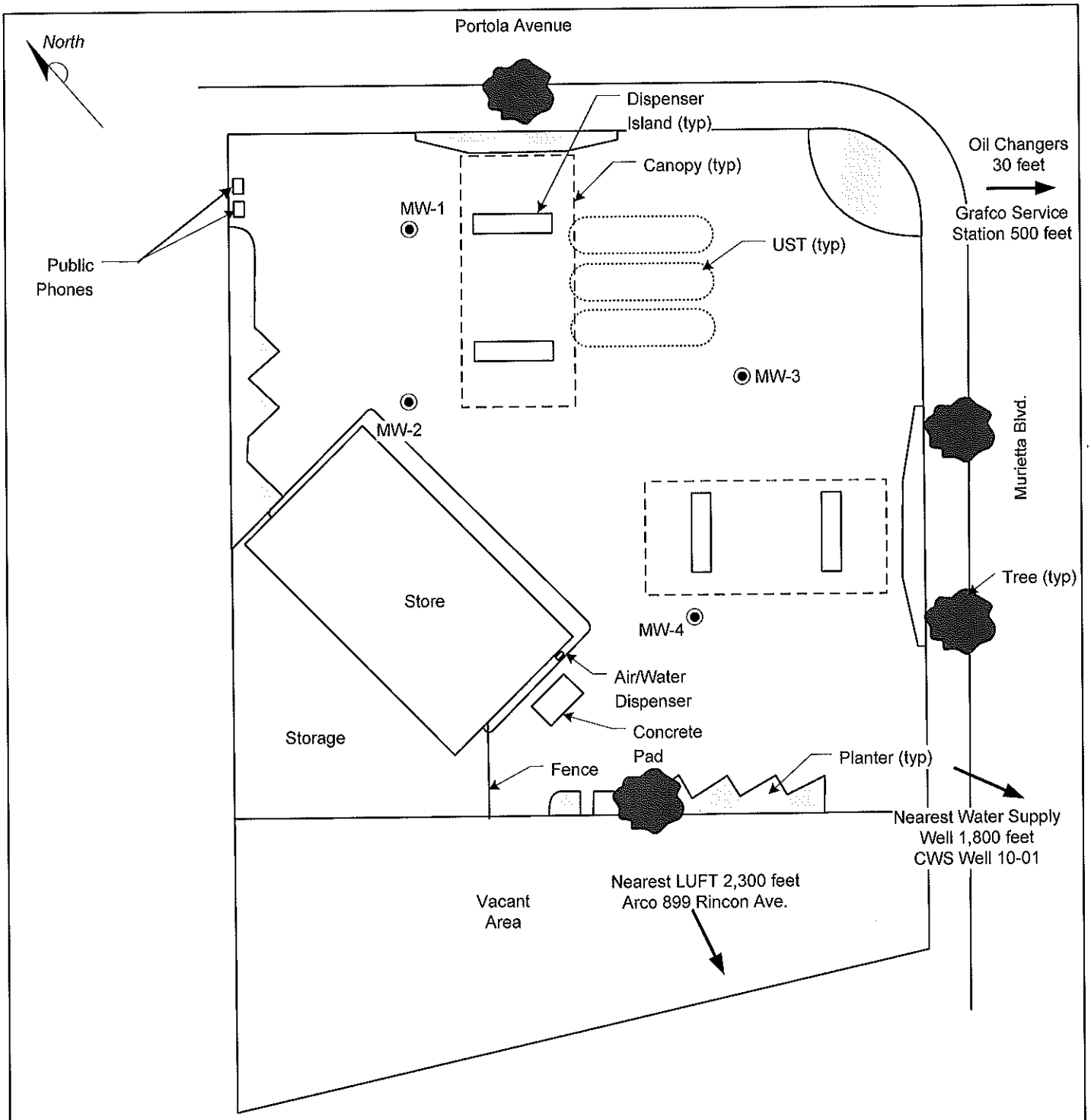
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



LEGEND

MW-4 ◉ **GROUNDWATER MONITORING WELL**

0 30 FT

APPROX. SCALE

SITE MAP

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.2005	DRAWN BY JL 11/23/05
FILE NO. SJ11-55P-1.2005	PREPARED BY JL
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.