Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18MCAS06-002 96-04493-15	18MCAS10-002 96-04493-16	18MCAS09-002 96-04493-18
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	3.2J	2.6J
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	23	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Fluorene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18MCAS06-002 96-04493-15	18MCAS10-002 96-04493-16	18MCAS09-002 96-04493-18
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Sample contains 0.4 mg/L of Nitrite as analyzed by method 354.1.

(b) Sample contains 0.5 mg/L of Nitrite as analyzed by method 354.1.

(c) Additional compound per client's request.

(d) Sample contains 0.2 mg/L of Nitrite as analyzed by method 354.1.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General chemistry*	Treatability parameters*	Herbicides (8150)	Pesticides (CLP)	Metals (CLP) Chrom VI	TPH Gas/TPH Diesel	REMARKS WESTBAY TEAM	PRESERVATIVE USED
18BGMP10A-002	11-19-96	1205		✓	H_2O	3	2		1						*General chemistry includes	
18BGMP10B-002	11-19-96	1335		✓	H_2O	4	2	1	1						TDS, nitrate/nitrite as N,	
18BGMP10C-002	11-19-96	1420		✓	H_2O	3	2		1						sulfate, chloride, carbonate,	
18BGMP10D-002	11-19-96	1530		✓	H_2O	4	2	1	1						bicarbonate, alkalinity	
18BGMP10E-002	11-19-96	1615		✓	H_2O	3	2		1							
18BGMP10F-002	11-19-96	1650		✓	H_2O	3	2		1						*Treatability parameters	
TB-WB-11-20-96	—	—		-	H_2O	1	1								include COD, TOC, ammonia-	
															nitrogen, phosphate, silica,	
															TSS, color	
															NFESC QC Level D	
															for all samples.	
															Metals samples have	
															been field filtered.	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Schwab	11/20/96 8:10				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Christine Kazlauskas	11/20/96 8:10				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL courier - 1 cooler				APCL Chino, CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General chemistry *	Treatability parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP) (chrom. VI)	TPH Gas/TPH Diesel	REMARKS DEDICATED PUMP TEAM	PRESERVATIVE USED
18BGMW2A-002	11/19/96	1010		✓	H_2O	8	2	1	1		1			3	* General chemistry includes	
14DBMW50-002	11/19/96	1345		✓	H_2O	8	2		1	3			2		TDS, nitrate/nitrite as N,	
13DGMW78-002	11/19/96	1450		✓	H_2O	8	2		1	3			2		sulfate, chloride, carbonate,	
13DBMW49-002	11/19/96	1550		✓	H_2O	9	2	1	1	3			2		bicarbonate, alkalinity.	
14DGMW79-002	11/19/96	1250		✓	H_2O	8	2		1	3			2			
13DBMW49-302	11/19/96	1555		✓	H_2O	9	2	1	1	3			2		* Treatability parameters	
TB-D-11-20-96	—	—		—	H_2O	1	1								include COD, TOC, ammonia-	
															nitrogen, phosphate, silica,	
															TSS, color	
															NFESC QC level D	
															for all samples	
															Metals samples have been	
															field filtered.	

CDM Federal

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Schwab	11/20/96 8:10				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Antonio Sanchez	11/20/96 8:10				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL courier - 1 cooler				APCL Chino, CA 909.590.1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWTP

SAMPLERS: (Signature) [illegible]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General chemistry *	Treatability parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP)	Chrom. VI	TPH gas / TPH Diesel	REMARKS NON-DEDICATED PUMP TRAIN	PRESERVATIVE USED
18MCAS04-002	11-19-96	0925		✓	H_2O	4	2	1	1							* General chemistry include	
18MCAS06-002	11-19-96	1050		✓	H_2O	4	2	1	1							TDS, nitrate/nitrite as N,	
18MCAS10-002	11-19-96	1310		✓	H_2O	4	2	1	1							sulfate, chloride, carbonate	
18MCAS09-002	11-19-96	1500		✓	H_2O	4	2	1	1							bicarbonate, alkalinity	
TB-ND-11-20-96	—	—		—	H_2O	1	1										
18MCAS04-702	11/19/96	1200		✓	H_2O	14	2	1	1	3	1	1	2	3		* Treatability parameters	
18MCAS09-502	11/19/96	1645		✓	H_2O	9	2	1	1		1	1		3		include COD, TOC, ammonia-	
																nitrogen, phosphate, silica,	
																TSS, color	
																NFESC QC Level D	
																for all samples	
																Metals samples have been	
																field filtered	

C. Dunn Federal

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[illegible]	11/20/96 810				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[illegible]	11/20/96 8:10				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL courier - 1 cooler				APCL Chino, CA 909 590 1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
3760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964504
Collected by:
Collected on: 11/20-21/96

Received: 11/21/96
Extracted: 11/21-22/96
Tested: 11/21-29/96
Reported: 12/03/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01DGMW57 96-04504-1	01MW101-002 96-04504-2	01MW102-002 96-04504-3	01MW102-702 96-04504-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	250	138	246	125
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	250	138	246	125
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	61.7	83.8	166	98.8
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	2.3	1.2	1.8	0.3
Solids, Total Dissolved (TDS)	160.1	mg/L	10	508	406	581	645
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	80.7	85.0	42.0	274
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	2	N.D.	15
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	2
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	1	N.D.	11
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	2	N.D.	14
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	N.D.	18	8	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01DGMW57 96-04504-1	01MW101-002 96-04504-2	01MW102-002 96-04504-3	01MW102-702 96-04504-4
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01DGMW57 96-04504-1	01MW101-002 96-04504-2	01MW102-002 96-04504-3	01MW102-702 96-04504-4
Fluorene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5	17DGMW82-002 96-04504-6	17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
Alkalinity	310.1	mg-$CaCO_3$/L	2	321	272	192	179
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	321	272	192	179
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	162	113	90.4	132
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	51.6	1.4	4.8	N.D.
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,880	760	450	397
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	593	172	47.4	40.8

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5	17DGMW82-002 96-04504-6	17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
CLP: VOC by GC/MS							
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	0.8J	0.8J	N.D.	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5	17DGMW82-002 96-04504-6	17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5	17DGMW82-002 96-04504-6	17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
Fluorene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Isophorone	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Naphthalene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Phenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
Pyrene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	-	N.D.	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	-	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS05A-002 96-04504-9	18MCAS05A-302 96-04504-10	18MCAS05A-502 96-04504-11	18MCAS07-6-002 96-04504-12
Alkalinity	310.1	mg-$CaCO_3$/L	2	233	222	N.D.	209
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	233	222	N.D.	209
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	170	176	N.D.	177
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	5.6	5.7	N.D.	N.D.
Solids, Total Dissolved (TDS)	160.1	mg/L	10	701	719	N.D.	703
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	128	129	N.D.	161

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS05A-002 96-04504-9	18MCAS05A-302 96-04504-10	18MCAS05A-502 96-04504-11	18MCAS07-6-002 96-04504-12
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	8
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.	1	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	0.7J	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	4	4	N.D.	33
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS05A-002 96-04504-9	18MCAS05A-302 96-04504-10	18MCAS05A-502 96-04504-11	18MCAS07-6-002 96-04504-12
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	69	3.9J	25	-
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	-
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	-
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	-

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS05A-002 96-04504-9	18MCAS05A-302 96-04504-10	18MCAS05A-502 96-04504-11	18MCAS07-6-002 96-04504-12
Fluorene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Isophorone	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	-
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	-

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS07-7-002 96-04504-13	18MCAS07-7-502 96-04504-14	18MCAS07-8-002 96-04504-15	18MCAS07-9-002 96-04504-16
Alkalinity	310.1	mg-$CaCO_3$/L	2	211	N.D.	220	317
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	211	N.D.	220	317
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	160	N.D.	144	457
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	4.8	N.D.	6.1	33.2
Solids, Total Dissolved (TDS)	160.1	mg/L	10	737	N.D.	674	2,180
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	171	N.D.	149	576

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS07-7-002 96-04504-13	18MCAS07-7-502 96-04504-14	18MCAS07-8-002 96-04504-15	18MCAS07-9-002 96-04504-16
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	1	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	0.6J	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	2	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	0.5J	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	1	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	0.8J	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	45	N.D.	1	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS07-7-002 96-04504-13	18MCAS07-7-502 96-04504-14	18MCAS07-8-002 96-04504-15	18MCAS07-9-002 96-04504-16
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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Fluorene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS08-002 96-04504-17	TB-DP-11-21-96 96-04504-18	TB-ND-11-21-96 96-04504-19	TB-WB-11-21-96 96-04504-20
Alkalinity	310.1	mg-$CaCO_3$/L	2	201	-	-	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	201	-	-	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	-	-	-
Chloride Cl^- by IC	300.0	mg/L	0.2	124	-	-	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	N.D.	-	-	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	929	-	-	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	0.8	-	-	-

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS08-002 96-04504-17	TB-DP-11-21-96 96-04504-18	TB-ND-11-21-96 96-04504-19	TB-WB-11-21-96 96-04504-20
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	2	N.D.	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	1	N.D.	N.D.	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS08-002 96-04504-17	TB-DP-11-21-96 96-04504-18	TB-ND-11-21-96 96-04504-19	TB-WB-11-21-96 96-04504-20
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Carbazole	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Chrysene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18MCAS08-002 96-04504-17	TB-DF-11-21-96 96-04504-18	TB-ND-11-21-96 96-04504-19	TB-WB-11-21-96 96-04504-20
Fluorene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.	-	-	-
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Isophorone	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.	-	-	-
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Naphthalene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-	-	-
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-	-	-
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-	-	-
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.	-	-	-
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.	-	-	-
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.	-	-	-
Phenanthrene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Phenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
Pyrene	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01MW102-702 96-04504-4	17DGMW82-002 96-04504-6	18MCAS05A-502 96-04504-11
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.	N.D.
Color	110.2	Color Unit	1	N.D.	N.D.	N.D.
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	8	47	N.D.
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.	N.D.	N.D.
Carbon, Total Organic (TOC)	415.1	mg/L	1	3	2	2

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01MW102-702 96-04504-4	17DGMW82-002 96-04504-6	18MCAS05A-502 96-04504-11
CLP Metals (Full CLP 23 metals)						
Aluminum	CLP-Metal	µg/L	200	178J	10.2J	17.4J
Antimony	CLP-Metal	µg/L	60	N.D.	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	N.D.	3.4J	N.D.
Barium	CLP-Metal	µg/L	200	125J	26.0J	N.D.
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	75,000	74,000	159J
Chromium	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Cobalt	CLP-Metal	µg/L	50	N.D.	N.D.	N.D.
Copper	CLP-Metal	µg/L	25	2.9J	N.D.	N.D.
Iron	CLP-Metal	µg/L	100	N.D.	N.D.	N.D.
Lead	CLP-Metal	µg/L	5	1J	N.D.	1J
Magnesium	CLP-Metal	µg/L	5000	29,000	25,000	N.D.
Manganese	CLP-Metal	µg/L	15	N.D.	2.5J	N.D.
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	7.1J	33J	N.D.
Potassium	CLP-Metal	µg/L	5000	5,210	5,000	174J
Selenium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Silver	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	99,000	138,000	N.D.
Thallium	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Vanadium	CLP-Metal	µg/L	50	2.6J	8.5J	N.D.
Zinc	CLP-Metal	µg/L	20	16J	23	4.2J
TPH: Gasoline	M8015	mg/L	0.05	N.D.	-	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.	-	N.D.
CLP: Organochlorine pesticides & PCB						
Aldrin	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
beta-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
delta-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Dieldrin	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 01MW102-702 96-04504-4	17DGMW82-002 96-04504-6	18MCAS05A-502 96-04504-11
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Endrin	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.	N.D.	N.D.
Heptachlor	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.	N.D.	N.D.
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.	N.D.	N.D.
Toxaphene	CLP-Pest	µg/L	5.0	N.D.	N.D.	N.D.
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.	N.D.	N.D.
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.	N.D.	N.D.
Chlorinated herbicides						
2,4-D	8150	µg/L	0.5	N.D.	N.D.	N.D.
2,4-DB	8150	µg/L	0.5	N.D.	N.D.	N.D.
Dalapon (dichloroacetic acid)	8150	µg/L	1	N.D.	N.D.	N.D.
Dicamba	8150	µg/L	0.5	N.D.	N.D.	N.D.
Dichloroprop	8150	µg/L	0.5	N.D.	N.D.	N.D.
Dinoseb (DNBP)	8150	µg/L	0.5	N.D.	N.D.	N.D.
2,4,5-T	8150	µg/L	0.5	N.D.	N.D.	N.D.
2,4,5-TP (Silvex)	8150	µg/L	0.5	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL	Analysis Result 01DGMW57 96-04504-1	01MW101-002 96-04504-2	01MW102-002 96-04504-3
CLP Metals (Full CLP 23 metals)						
Aluminum	CLP-Metal	µg/L	200	12.2J	53.3J	94.6J
Antimony	CLP-Metal	µg/L	60	N.D.	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	N.D.	N.D.	2.9J
Barium	CLP-Metal	µg/L	200	11.5J	25.5J	9.18J
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	63,000	42,000	102,000

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Component Analyzed	Method	Unit	CRDL	Analysis Result 01DGMW57 96-04504-1	01MW101-002 96-04504-2	01MW102-002 96-04504-3
Chromium	CLP-Metal	µg/L	10	N.D.	N.D.	71
Cobalt	CLP-Metal	µg/L	50	N.D.	N.D.	2.1J
Copper	CLP-Metal	µg/L	25	3.3J	1.8J	13J
Iron	CLP-Metal	µg/L	100	N.D.	N.D.	2,350
Lead	CLP-Metal	µg/L	5	1J	0.9J	N.D.
Magnesium	CLP-Metal	µg/L	5000	26,000	13,000	8,100
Manganese	CLP-Metal	µg/L	15	5.4J	16	36
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	65	12J	230
Potassium	CLP-Metal	µg/L	5000	2870J	8,940	4400J
Selenium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Silver	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	64,000	67,000	82,000
Thallium	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Vanadium	CLP-Metal	µg/L	50	3.1J	2.9J	4.6J
Zinc	CLP-Metal	µg/L	20	5.9J	9.1J	16J

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
CLP Metals (Full CLP 23 metals)					
Aluminum	CLP-Metal	µg/L	200	10.5J	17.6J
Antimony	CLP-Metal	µg/L	60	2.6J	N.D.
Arsenic	CLP-Metal	µg/L	10	3.7J	N.D.
Barium	CLP-Metal	µg/L	200	107J	35.1J
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	74,000	29,000
Chromium	CLP-Metal	µg/L	10	2.4J	N.D.
Cobalt	CLP-Metal	µg/L	50	1.8J	1.6J
Copper	CLP-Metal	µg/L	25	4.4J	2.4J
Iron	CLP-Metal	µg/L	100	N.D.	N.D.
Lead	CLP-Metal	µg/L	5	1J	N.D.
Magnesium	CLP-Metal	µg/L	5000	21,000	18,000
Manganese	CLP-Metal	µg/L	15	39	79
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	1,220	93
Potassium	CLP-Metal	µg/L	5000	1960J	5,190
Selenium	CLP-Metal	µg/L	5	N.D.	N.D.
Silver	CLP-Metal	µg/L	10	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	43,000	91,000
Thallium	CLP-Metal	µg/L	10	N.D.	N.D.
Vanadium	CLP-Metal	µg/L	50	12J	4.5J
Zinc	CLP-Metal	µg/L	20	11J	4.7J

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 17NEW1-002 96-04504-7	17NEW2-002 96-04504-8
CLP: Organochlorine pesticides & PCB					
Aldrin	CLP-Pest	µg/L	0.050	N.D.	N.D.
beta-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.
delta-BHC	CLP-Pest	µg/L	0.050	N.D.	N.D.
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.	N.D.
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.	N.D.
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.	N.D.
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.	N.D.
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.	N.D.
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.	N.D.
Dieldrin	CLP-Pest	µg/L	0.10	N.D.	N.D.
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.	N.D.
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.	N.D.
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.	N.D.
Endrin	CLP-Pest	µg/L	0.10	N.D.	N.D.
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.	N.D.
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.	N.D.
Heptachlor	CLP-Pest	µg/L	0.050	N.D.	N.D.
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.	N.D.
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.	N.D.
Toxaphene	CLP-Pest	µg/L	5.0	N.D.	N.D.
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.	N.D.
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.	N.D.
Chlorinated herbicides					
2,4-D	8150	µg/L	0.5	N.D.	N.D.
2,4-DB	8150	µg/L	0.5	N.D.	N.D.
Dalapon (dichloroacetic acid)	8150	µg/L	1	N.D.	N.D.
Dicamba	8150	µg/L	0.5	N.D.	N.D.
Dichloroprop	8150	µg/L	0.5	N.D.	N.D.
Dinoseb (DNBP)	8150	µg/L	0.5	N.D.	N.D.
2,4,5-T	8150	µg/L	0.5	N.D.	N.D.
2,4,5-TP (Silvex)	8150	µg/L	0.5	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5
TPH: Gasoline	M8015	mg/L	0.05	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW19E-002 96-04504-5
CLP: Organochlorine pesticides & PCB				
Aldrin	CLP-Pest	µg/L	0.050	N.D.
beta-BHC	CLP-Pest	µg/L	0.050	N.D.
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.
delta-BHC	CLP-Pest	µg/L	0.050	N.D.
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.
Dieldrin	CLP-Pest	µg/L	0.10	N.D.
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.
Endrin	CLP-Pest	µg/L	0.10	N.D.
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.
Heptachlor	CLP-Pest	µg/L	0.050	N.D.
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.
Toxaphene	CLP-Pest	µg/L	5.0	N.D.
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

4504

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 16206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GENERAL CHEMISTRY*	TREATABILITY PARAMETERS	HERBICIDES (8150)	PESTICIDES (CLP)	METALS (CLP) ~~CHROME VI~~	TPH GAS / TPH DIESEL	REMARKS DEDICATED PUMP TEAM	PRESERVATIVE USED
01DGMW57	11-20-96	916		✓	H_2O		~~6~~ 5	2	1	1				~~2~~ 1		-GEN CHEM INCLUDES TDS NITRATE/	
17NEW1-002	11-20-96	1143		✓	H_2O		~~7~~ 6	2		1		1	1	~~2~~ 1		NITRITE ASN, SULFATE, CHLORIDE,	
17NEW2-002	11-20-96	1032		✓	H_2O		~~14~~ 13	2	3	1		3	3	~~2~~ 1		CARBONATE, B/CARBONATE, ALKALINITY	
17DGMW82-002	11-20-96	1235		✓	H_2O		~~11~~ 10	2	1	1	3	1	1	~~2~~ 1			
18BGMW19E-002	11-20-96	1700		✓	H_2O		7	2		1			1		3	TREATABILITY PARAMETERS INCLUDE COD	
TB-DP-11-21-96	11-21-96						1	1								TOC, AMMONIA, NITROGEN, PHOSPHATE	
																SILICA, TSS, COLOR	
																-NFESC QC LEVELD FOR	
																ALL SAMPLES	
																-METALS HAVE BEEN FILTERED IN FIELD	
																-REFER TO PREVIOUSLY SENT	
																DETECTION LIMITS AND PRESERVATIVES	
																USED	
																*TRIPLE Volumes included for	
																SVOC, Pesticide, Herbicides	

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[signature]	11/21/96 8:10				
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CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	ANALYSIS REQUIRED: VOC (CLP)	SVOC (CLP)	GEN CHEMESTRY*						REMARKS	PRESERVATIVE USED
																WESTBAY TEAM	
18MCAS07-9-002	11-20-96	1720		✓	H_2O		4	2	1	1						- GEN CHEM INCLUDES TDS, NITRATE,	
18MCAS07-8-002	11-20-96	1610		✓	H_2O		4	2	1	1						NITRITE ASN, SULFATE, CHLORIDE,	
18MCAS07-7-002	11-20-96	1505		✓	H_2O		4	2	1	1						CARBONATE, b.CARBONATE ALKALINITY	
18MCAS07-6-002	11-20-96	1410		✓	H_2O		3	2		1						- NFESC LEVEL D FOR	
TB-WB-11-21-96	11-21-96	–		–	H_2O		1	1								ALL SAMPLES	
18MCAS07-7-502	11-20-96	1430		✓	H_2O		4	2	1	1						- REFER TO PREVIOUSLY SENT	
																DETECTION LIMITS AND	
																PRESERVATIVES USED	

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[signature]	11/21/96 8:10 am				
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[signature]	11/21/96 8:10 am				
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CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206 009

PROJECT NAME: MCAS ELTORO GWM

SAMPLERS: (Signature) [signature] [signature] [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GENERAL CHEMISTRY	TREATABILITY PARAMETERS	HERBICIDES (8150)	PESTICIDES (CLP)	METALS (CLP)	TPH GAS/TPH DIESEL	REMARKS NON DEDICATED PUMP TEAM	PRESERVATIVE USED
01 MW 101-002	11-20-96	0845		✓	H_2O		~~6~~ 5	2	1	1				~~2~~ 1		-GEN CHEM INCLUDES TDS, NITRATE/	
01 MW 102-002	11-20-96	0940		✓	H_2O		~~6~~ 5	2	1	1				~~2~~ 1		NITRITE AS N, SULFATE, CHLORIDE	
18MCAS 05A-002	11-20-96	1500		✓	H_2O		4	2	1	1						CARBONATE, B, CARBONATE, ALKALINITY	
18MCAS 08-002	11-20-96	1650		✓	H_2O		4	2	1	1							
TB-ND-11-21-96	11-21-96						1	1								-TREATIBILITY PARAMETERS INCLUDE	
18MCAS05A-302	11-20-96	1520		✓	H_2O		4	2	1	1						COD, TOC, AMMONIA, NITROGEN,	
18MCAS05A-502	11-20-96	1125		✓	H_2O		13 ~~14~~	2	1	1	3	1	1	~~2~~ 1	3	PHOSPHATE, SILICA, TSS, COLOR	
01MW102-702	11-20-96	1500		✓	H_2O		13 ~~14~~	2	1	1	3	1	1	~~2~~ 1	3	-NFESC QC LEVEL D FOR	
																ALL SAMPLES	
																-METALS HAVE BEEN FIELD FILTERED	
																-REFER TO PREVIOUSLY SENT DETECTION	
																LIMITS AND PRESERVATIVES USED	

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[signature]	11/21/96 8:10				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/21/96 8:10				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
AFCL COURIER				AFCL LAB CHINO CA 909-590-1828	

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Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964524
Collected by: Pat Russell
Collected on: 11/21-22/96

Received: 11/22/96
Extracted: 11/22-23/96
Tested: 11/22-12/03/96
Reported: 12/09/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro-GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 07DGMW43-002 96-04524-1	07DGMW70-002 96-04524-2	07DGMW70-302 96-04524-3	07DGMW71-002 96-04524-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	91	160	153	196
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	91	160	153	196
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	327	249	252	249
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	15.6	19.4	23.3	12.2
Solids, Total Dissolved (TDS)	160.1	mg/L	10	989	930	948	831
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	208	241	243	124
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	4	3	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	1	N.D.	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	4	2	2	10
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	0.9J	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 07DGMW72-002 96-04524-5	07DGMW91-002 96-04524-6	18BGMW03E-002 96-04524-7
Alkalinity	310.1	mg-$CaCO_3$/L	2	181	231	145
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	181	231	145
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	274	211	244
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	14.9	13.8	12.3
Solids, Total Dissolved (TDS)	160.1	mg/L	10	857	934	949
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	88.3	135	95.2
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	2	2	0.7J
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	3	4	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	0.6J	1
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	1	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	1	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	1	5	1
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	113	104	196
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	1J	N.D.	5J

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Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19UGMW35-002 96-04524-8	TB-DP-11-22-96 96-04524-9	TB-MD-11-22-96 96-04524-10
Alkalinity	310.1	mg-$CaCO_3$/L	2	155	-	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	155	-	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	-	-
Chloride Cl^- by IC	300.0	mg/L	0.2	133	-	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	11.1	-	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	717	-	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	157	-	-
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	2	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	2	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	3	N.D.	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	1J	N.D.	N.D.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 07DGMW72-002 96-04524-5	07DGMW91-002 96-04524-6	18BGMW03E-002 96-04524-7	19UGMW35-002 96-04524-8
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	0.2	0.2
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.	N.D.	N.D.
Color	110.2	Color Unit	1	N.D.	N.D.	1	1
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	56	54	46	53
Solids, Total Suspended (TSS)	160.2	mg/L	4	6	N.D.	13	40
Carbon, Total Organic (TOC)	415.1	mg/L	1	N.D.	N.D.	N.D.	N.D.
TPH: Gasoline	M8015	mg/L	0.05	-	-	N.D.	-
TPH: Diesel	M8015	mg/L	0.25	-	-	N.D.	-
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Carbazole	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-	-	-
Chrysene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-	-	-
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	20	-	-	-
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	-	-	-
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	-	-	-
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-	-	-
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-	-	-
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	-	-	-

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 07DGMW72-002 96-04524-5	07DGMW91-002 96-04524-6	18BGMW03E-002 96-04524-7	19UGMW35-002 96-04524-8
Fluorene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	-	-	-
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Isophorone	CLP-SVOC	μg/L	10	N.D.	-	-	-
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	-	-	-
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	-	-	-
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	-	-	-
Naphthalene	CLP-SVOC	μg/L	10	N.D.	-	-	-
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	-	-	-
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	-	-	-
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	-	-	-
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	-	-	-
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	-	-	-
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	-	-	-
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	-	-	-
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	-	-	-
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	-	-	-
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	-	-	-
Phenol	CLP-SVOC	μg/L	10	N.D.	-	-	-
Pyrene	CLP-SVOC	μg/L	10	N.D.	-	-	-
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	-	-	-
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	-	-	-
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	-	-	-

Component Analyzed	Method	Unit	PQL	Analysis Result 07DGMW70-002 96-04524-2	07DGMW70-302 96-04524-3
TPH: Gasoline	M8015	mg/L	0.05	N.D.	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

4524

CDM FEDERAL PROGRAMS CORPORATI

CHAIN OF CUSTODY RECORD

PROJ. NO.:	PROJECT NAME:
SAMPLERS: (Signature)	

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GEN CHEMESTRY*	TREATABILITY PARAMETERS	TPH GAS/TPH DIESEL				REMARKS	PRESERVATIVE USED
07DGMW91-002	11/21/96	845		✓	H_2O		6	2		1	3					GEN CHEMESTRY INCLUDES	
07DGMW72-002	11/21/96	955		✓	H_2O		6	2		1	3					TDS, NITRATE/NITRITE AS N,	
07DGMW71-002	11/21/96	1047		✓	H_2O		3	2		1						SULFATE, CHLORIDE, CARBONATE,	
07DGMW70-002	11/21/96	1200		✓	H_2O		8	2		1		5*				bi CARBONATE, ALKALINITY	
07DGMW43-002	11/21/96	1320		✓	H_2O		3	2		1							
18BGMW03E-002	11/21/96	1520		✓	H_2O		9	2		1	3	3				TREATABILITY PARAMETERS INCLUDE	
19UGMW35-002	11/21/96	1630		✓	H_2O		6	2		1	3					COD, TOC, AMMONIA, NITROGEN,	
07DGMW70-302	11/21/96	1220		✓	H_2O		6	2		1		3				PHOSPHATE, SILICA, TSS, COLOR	
TB-MD-11-22-96	11/22/96																
TB-DP-11-22-96	11/22/96															NFESC LEVEL D FOR ALL	
																SAMPLES.	
																TRIPLE VOLUME FOR DIESEL	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Patrick J Powell	11/22/96 7:50	[signature]	11/22/96 7:50		
Received by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Airbill No.		Received for Laboratory by: (Signature)	Date / Time	Laboratory: APCL LAB CHINO CA. 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

125504

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964562
Collected by:
Collected on: 11/25/96

Received: 11/26/96
Extracted: 11/26-29/96
Tested: 11/26-12/04/96
Reported: 12/09/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 08UGMW29-002 96-04562-1	16DBMW52-002 96-04562-2	16UGMW33-002 96-04562-3	18BGMW12-002 96-04562-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	147	237	321	265
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	147	237	321	265
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	241	93.0	6.6	157
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	13.8	21.1	7.8	11.5
Solids, Total Dissolved (TDS)	160.1	mg/L	10	830	1,230	613	1,680
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	77.2	525	158	722
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	0.7J	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	1	N.D.	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	17	0.6J	N.D.	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	15	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18PS1-002 96-04562-5	18PS2-002 96-04562-6	18PS2-502 96-04562-7	18PS6-002 96-04562-8
Alkalinity	310.1	mg-$CaCO_3$/L	2	261	362	N.D.	224
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	261	362	N.D.	224
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	315	173	N.D.	240
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	36.3	19.4	N.D.	23.2
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,640	1,580	N.D.	1,160
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	425	558	N.D.	340
CLP: VOC by GC/MS							
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	0.9J
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	N.D.	1	N.D.	2
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	0.7J	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	9
Toluene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	15	12	N.D.	30
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18PS6-302 96-04562-9	18PS8-002 96-04562-10	20DBMW88-002 96-04562-11
Alkalinity	310.1	mg-$CaCO_3$/L	2	222	229	211
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	222	229	211
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	196	221	175
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	23.3	16.4	13.9
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,230	848	1,200
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	325	103	422
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	1	2	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	2	2	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	1	1	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	10	1	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	33	157	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	9J	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 20DBMW88-302 96-04562-12	TB-D-11-26-96 96-04562-13	TB-ND-11-26-96 96-04562-14
Alkalinity	310.1	mg-$CaCO_3$/L	2	213	-	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	213	-	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	-	-
Chloride Cl^- by IC	300.0	mg/L	0.2	155	-	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	13.9	-	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,150	-	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	422	-	-
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	1	2	2
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 16DBMW52-002 96-04562-2
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	20
Color	110.2	Color Unit	1	N.D.
Phosphorus, Orthophosphate	300.0	mg/L	0.4	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	43
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.
Carbon, Total Organic (TOC)	415.1	mg/L	1	2
CLP Metals (Full CLP 23 metals)				
Aluminum	CLP-Metal	μg/L	200	21.1J
Antimony	CLP-Metal	μg/L	60	N.D.
Arsenic	CLP-Metal	μg/L	10	4.1J
Barium	CLP-Metal	μg/L	200	23.5J
Beryllium	CLP-Metal	μg/L	5	N.D.
Cadmium	CLP-Metal	μg/L	5	N.D.
Calcium	CLP-Metal	μg/L	5000	102,000
Chromium	CLP-Metal	μg/L	10	8.8J
Cobalt	CLP-Metal	μg/L	50	N.D.
Copper	CLP-Metal	μg/L	25	3.8J
Iron	CLP-Metal	μg/L	100	34.3J
Lead	CLP-Metal	μg/L	5	2J
Magnesium	CLP-Metal	μg/L	5000	85,000
Manganese	CLP-Metal	μg/L	15	2.7J
Mercury	CLP-Metal	μg/L	0.2	N.D.
Nickel	CLP-Metal	μg/L	40	48
Potassium	CLP-Metal	μg/L	5000	4030J
Selenium	CLP-Metal	μg/L	5	22
Silver	CLP-Metal	μg/L	10	N.D.
Sodium	CLP-Metal	μg/L	5000	166,000
Thallium	CLP-Metal	μg/L	10	1.8J
Vanadium	CLP-Metal	μg/L	50	25J
Zinc	CLP-Metal	μg/L	20	6.8J
Chromium (VI)	7196	mg/L	0.002	0.008

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 08UGMW29-002 96-04562-1	16UGMW33-002 96-04562-3
CLP Metals (Full CLP 23 metals)					
Aluminum	CLP-Metal	µg/L	200	18.8J	21.0J
Antimony	CLP-Metal	µg/L	60	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	N.D.	3.6J
Barium	CLP-Metal	µg/L	200	84.2J	35.1J
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	109,000	63,000
Chromium	CLP-Metal	µg/L	10	1.9J	8.5J
Cobalt	CLP-Metal	µg/L	50	5.1J	N.D.
Copper	CLP-Metal	µg/L	25	2.7J	2.4J
Iron	CLP-Metal	µg/L	100	64.4J	29.5J
Lead	CLP-Metal	µg/L	5	2J	1J
Magnesium	CLP-Metal	µg/L	5000	32,000	44,000
Manganese	CLP-Metal	µg/L	15	22	2.7J
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	1,280	3.5J
Potassium	CLP-Metal	µg/L	5000	3470J	3800J
Selenium	CLP-Metal	µg/L	5	N.D.	N.D.
Silver	CLP-Metal	µg/L	10	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	106,000	79,000
Thallium	CLP-Metal	µg/L	10	2.4J	N.D.
Vanadium	CLP-Metal	µg/L	50	4.1J	31J
Zinc	CLP-Metal	µg/L	20	18J	8.7J
Chromium (VI)	7196	mg/L	0.002	N.D.	0.008
CLP: Organochlorine pesticides & PCB					
Aldrin	CLP-Pest	µg/L	0.050	N.D.	-
beta-BHC	CLP-Pest	µg/L	0.050	N.D.	-
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.	-
delta-BHC	CLP-Pest	µg/L	0.050	N.D.	-
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.	-
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.	-
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.	-
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.	-
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.	-
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.	-
Dieldrin	CLP-Pest	µg/L	0.10	N.D.	-
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.	-
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.	-
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.	-
Endrin	CLP-Pest	µg/L	0.10	N.D.	-
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.	-
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.	-
Heptachlor	CLP-Pest	µg/L	0.050	N.D.	-
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.	-
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.	-
Toxaphene	CLP-Pest	µg/L	5.0	N.D.	-
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.	-
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 18BGMW12-002 96-04562-4
TPH: Gasoline	M8015	mg/L	0.05	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.

Component Analyzed	Method	Unit	CRDL	Analysis Result 18PS2-002 96-04562-6	18PS2-502 96-04562-7
CLP: Semi-VOC by GC/MS					
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18PS2-002 96-04562-6	18PS2-502 96-04562-7
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	1.5J
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Fluorene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.	N.D.
Naphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Phenol	CLP-SVOC	µg/L	10	N.D.	N.D.
Pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18PS8-002 96-04562-10	20DBMW88-002 96-04562-11	20DBMW88-302 96-04562-12
CLP: Semi-VOC by GC/MS						
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	13	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.	N.D.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18PS8-002 96-04562-10	20DBMW88-002 96-04562-11	20DBMW88-302 96-04562-12
Fluorene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

4562

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PRESERVATIVE USED 027303

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General Chemistry *	Treatability Parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP)/chrom VI	TPH Gas/TPH Diesel	REMARKS Non Dedicated Pump Team
18PS6-30Z	11/25/96	1025		✓	H2O	3	2		1						*General chemistry include
18PS6-00Z		1005		✓		3	2		1						TDS, nitrate/nitrite as N,
18PS1-00Z		1150		✓		3	2		1						sulfate, chloride, carbonate,
18PS8-00Z		0905		✓		4	2	1	1						bicarbonate, alkalinity
18PS2-00Z		1355		✓		4	2	1	1						
18PS2-50Z		1330		✓		4	2	1	1						*Treatability parameters
08UGMW29-00Z	↓	1650		✓		6	2		1		1	2			include COD, TOC,
TB-ND-11-26-96	–	–		–	↓	1	1								ammonia-nitrogen, phosphate,
															silica, TSS, color
															NFESC QC Level D for
															all samples
															Metals samples have been
															field filtered

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	11/26/96 8:03AM				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/26/96 8:03am				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL Courier				APCL Chino, CA (909) 590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

4569

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General chemistry *	Treatability parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP)/chrom VI	TPH gas/TPH Diesel	REMARKS Dedicated Pump Tests	PRESERVATIVE USED
20DBMW88-302	11/25/96	1555		✓	H_2O		4	2	1	1						*General chemistry include	
20DBMW88-002	11/25/96	1550		✓	H_2O		4	2	1	1						TDS, nitrate/nitrite as N,	
18BGMW12-002	11/25/96	1657		✓	H_2O		6	2		1					3	sulfate, chloride, carbonate,	
16DBMW52-002	11/25/96	1120		✓	H_2O		8	2		1	3			2		bicarbonate, alkalinity	
16UGMW33-002	11/25/96	1328		✓	H_2O		5	2		1				2			
TB-D-11-26-96	—	—		-	H_2O		1	1								*Treatability parameters include	
																COD, TOC, ammonia-nitrogen,	
																phosphate, silica, TSS, color	
																NFESC QC level D for	
																all samples	
																Metals samples have been	
																field filtered	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Purnell	11/26/96 803 AM				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Cristina Gonzalez	11/26/96 8:03 am				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL Courier				APCL Chino, CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

4304

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964571
Collected by: Pat Russell
Collected on: 11/26/96

Received: 11/26/96
Extracted: 11/26-29/96
Tested: 11/26-12/04/96
Reported: 12/09/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW2-002 96-04571-1	Analysis Result 18BGMW24-002 96-04571-2
Alkalinity	310.1	mg-$CaCO_3$/L	2	257	254
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	257	254
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	85.5	49.9
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	9.4	9.7
Solids, Total Dissolved (TDS)	160.1	mg/L	10	806	808
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	225	253
CLP: VOC by GC/MS					
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	1	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW24-302 96-04571-3	21DGMW90-002 96-04571-4	TB-DP-11-26-96 96-04571-5
Alkalinity	310.1	mg-$CaCO_3$/L	2	254	209	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	254	209	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	-
Chloride Cl^- by IC	300.0	mg/L	0.2	55.5	156	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	9.8	24.1	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	822	882	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	275	186	-
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	1	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	2	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	N.D.	3	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	1.0J	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW2-002 96-04571-1
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.
Color	110.2	Color Unit	1	N.D.
Phosphorus, Orthophosphate	300.0	mg/L	0.4	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	33
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.
Carbon, Total Organic (TOC)	415.1	mg/L	1	2
CLP Metals (Full CLP 23 metals)				
Aluminum	CLP-Metal	µg/L	200	27.4J
Antimony	CLP-Metal	µg/L	60	N.D.
Arsenic	CLP-Metal	µg/L	10	3.5J
Barium	CLP-Metal	µg/L	200	67.1J
Beryllium	CLP-Metal	µg/L	5	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.
Calcium	CLP-Metal	µg/L	5000	123,000
Chromium	CLP-Metal	µg/L	10	1.7J
Cobalt	CLP-Metal	µg/L	50	N.D.
Copper	CLP-Metal	µg/L	25	3.8J
Iron	CLP-Metal	µg/L	100	50.5J
Lead	CLP-Metal	µg/L	5	2J
Magnesium	CLP-Metal	µg/L	5000	34,000
Manganese	CLP-Metal	µg/L	15	6.8J
Mercury	CLP-Metal	µg/L	0.2	N.D.
Nickel	CLP-Metal	µg/L	40	13J
Potassium	CLP-Metal	µg/L	5000	1730J
Selenium	CLP-Metal	µg/L	5	6
Silver	CLP-Metal	µg/L	10	N.D.
Sodium	CLP-Metal	µg/L	5000	76,000
Thallium	CLP-Metal	µg/L	10	N.D.
Vanadium	CLP-Metal	µg/L	50	14J
Zinc	CLP-Metal	µg/L	20	13J
Chromium (VI)	7196	mg/L	0.002	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW2-002 96-04571-1
CLP: Semi-VOC by GC/MS				
Acenaphthene	CLP-SVOC	µg/L	10	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.
Fluorene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW2-002 96-04571-1
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.
Naphthalene	CLP-SVOC	µg/L	10	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	N.D.
Phenol	CLP-SVOC	µg/L	10	N.D.
Pyrene	CLP-SVOC	µg/L	10	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	N.D.
CLP: Organochlorine pesticides & PCB				
Aldrin	CLP-Pest	µg/L	0.050	N.D.
beta-BHC	CLP-Pest	µg/L	0.050	N.D.
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.
delta-BHC	CLP-Pest	µg/L	0.050	N.D.
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.
Dieldrin	CLP-Pest	µg/L	0.10	N.D.
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.
Endrin	CLP-Pest	µg/L	0.10	N.D.
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.
Heptachlor	CLP-Pest	µg/L	0.050	N.D.
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.
Toxaphene	CLP-Pest	µg/L	5.0	N.D.
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW2-002 96-04571-1
Chlorinated herbicides				
2,4-D	8150	μg/L	0.5	N.D.
2,4-DB	8150	μg/L	0.5	N.D.
Dalapon (dichloroacetic acid)	8150	μg/L	1	N.D.
Dicamba	8150	μg/L	0.5	N.D.
Dichloroprop	8150	μg/L	0.5	N.D.
Dinoseb (DNBP)	8150	μg/L	0.5	N.D.
2,4,5-T	8150	μg/L	0.5	N.D.
2,4,5-TP (Silvex)	8150	μg/L	0.5	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General Chemistry *	Treatability Parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP)/Chrom VI	TPH Gas/TPH Diesel	REMARKS	PRESERVATIVE USED
02NEW2-002	11/26/96	0841		✓	H_2O	11	2	1	1	3	1	1	2		*General chemistry include	
18BGMW24-002	11/26/96	1050		✓	H_2O	3	2		1						TDS, nitrate/nitrite as N,	
18BGMW24-302	11/26/96	1055		✓	H_2O	3	2		1						sulfate, chloride, carbonate,	
21BGMW90-002	11/26/96	1340		✓	H_2O	3	2		1						bicarbonate, alkalinity	
TB-DP-11-26-96	11/26/96															
															*Treatability parameters	
															include COD, TOC, ammonia-	
															nitrogen, phosphate, silica,	
															TSS, color	
															NFESC QC level D	
															for all samples	
															Metals samples have been	
															field filtered	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/26/96 2:06PM				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Nelson	11/26/96 2:06				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
ARCL courier				ARCL Chino CA (909) 590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964588
Collected by:
Collected on: 11/27/96

Received: 11/27/96
Extracted: XXXXXX
Tested: 11/27/96
Reported: 12/09/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 18BGMW01D-002R 96-04588-4	Analysis Result 18BGMW02E-002R 96-04588-5
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	7.3 [a]	9.0

Component Analyzed	Method	Unit	PQL	Analysis Result 02DGMW59-002R 96-04588-1	Analysis Result 02NEW1-002R 96-04588-2	Analysis Result 02NEW11-002R 96-04588-3
Chromium (VI)	7196	mg/L	0.002	N.D.	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
[a] Sample contains 1.3 mg/L of Nitrite as analyzed by 354.1.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	CHROME VI	NITRITE/NITRATE								REMARKS	PRESERVATIVE USED
02NEW1-002R	11/27/96	1216		✓	H_2O		1	1										
18BGMW02E-002R	11/27/96	1043		✓	H_2O		1		1									
18BGMW01D-002R	11/27/96	0952		✓	H_2O		1		1									
02NEW11-002R	11/27/96	1137		✓	H_2O		1	1										
02DGMW59-002R	11/27/96	1248		✓	H_2O		1	1										

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	11/27/96 1:58				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/27/96 1:58				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL Courier				APCL LAB CHINO CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964603
Collected by:
Collected on: 12/02/96

Received: 12/02/96
Extracted: 12/04-05/96
Tested: 12/03-10/96
Reported: 12/13/96

Sample Description: Water
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 22DBMW47-502 96-04603-1	24NEW5-002 96-04603-2	24NEW6-002 96-04603-3	TB-DP-12-2-96 96-04603-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	N.D.	168	168	-
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	N.D.	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	168	168	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	-
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.	N.D.	-
Chloride Cl^- by IC	300.0	mg/L	0.2	N.D.	148	120	-
Color	110.2	Color Unit	1	N.D.	1	1	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	N.D.	7.1	13.6	-
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	N.D.	-
Silica (SiO_2) dissolved	370.1	mg/L	1	N.D.	52	48	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	23	745	673	-
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.	N.D.	4	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	N.D.	128	95.8	-
Carbon, Total Organic (TOC)	415.1	mg/L	1	1	N.D.	N.D.	-
CLP: VOC by GC/MS							
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	N.D.	N.D.	1	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 22DBMW47-502 96-04603-1	24NEW5-002 96-04603-2	24NEW6-002 96-04603-3	TB-DP-12-2-96 96-04603-4
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	3	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	2	13	N.D.
Toluene	CLP-VOC	µg/L	1	1J	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	N.D.	0.7J	29	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 24NEW5-002 96-04603-2	24NEW6-002 96-04603-3
CLP Metals (Full CLP 23 metals)					
Aluminum	CLP-Metal	µg/L	200	21.7J	34.5J
Antimony	CLP-Metal	µg/L	60	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	2.7J	2.4J
Barium	CLP-Metal	µg/L	200	36J	56J
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	96,000	86,000
Chromium	CLP-Metal	µg/L	10	3.4J	14
Cobalt	CLP-Metal	µg/L	50	1.5J	N.D.
Copper	CLP-Metal	µg/L	25	N.D.	N.D.
Iron	CLP-Metal	µg/L	100	N.D.	N.D.
Lead	CLP-Metal	µg/L	5	1J	2J
Magnesium	CLP-Metal	µg/L	5000	26,000	25,000
Manganese	CLP-Metal	µg/L	15	8.2J	6.8J
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	110	82
Potassium	CLP-Metal	µg/L	5000	3300J	3100J
Selenium	CLP-Metal	µg/L	5	7	N.D.
Silver	CLP-Metal	µg/L	10	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	80,000	82,000
Thallium	CLP-Metal	µg/L	10	3.3J	2.1J
Vanadium	CLP-Metal	µg/L	50	18J	21J
Zinc	CLP-Metal	µg/L	20	3.7J	6.8J
Chromium (VI)	7196	mg/L	0.002	0.002	0.009

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 22DBMW47-502 96-04603-1
CLP: Semi-VOC by GC/MS				
Acenaphthene	CLP-SVOC	µg/L	10	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	3.9J
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	3.1J
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 22DBMW47-502 96-04603-1
Fluorene	CLP-SVOC	μg/L	10	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

Respectfully submitted,

Jack Y. Zhang, Ph. D.,
President
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro - GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	General Chemistry*	Treatability Parameters	Herbicides (8150)	Pesticides (CLP)	Metals (CLP)/Chrom VI	TPH Gas/TPH Diesel	REMARKS	PRESERVATIVE USED
24NEW5-002	12/2/96	11:20		✓	H_2O		8	2		1	3			2		*General chemistry include	
24NEW6-002	12/2/96	0945		✓	H_2O		8	2		1	3			2		TDS, nitrate/nitrite as N	
22DBMW47-502	12/2/96	1225		✓	H_2O		7	2	1	1	3					sulfate, chloride, carbonate,	
TB-DP-12-2-96	12/2/96						2	2								bicarbonate, alkalinity	
																*Treatability parameters	
																include COD, TOC, ammonia-	
																nitrogen, phosphate, silica,	
																TSS, color	
																NFESC GC Level D	
																for all samples	
																Metals samples have	
																been field filtered	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	12/2/96 1430				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12/2/96 2:30				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL Courier	Cooler			APCL Chino, CA (909) 590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964605
Collected by: Pat Russell
Collected on: 12/02/96

Received: 12/03/96
Extracted: 12/04-05/96
Tested: 12/03-10/96
Reported: 12/12/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 08DGMW73-002 96-04605-1	Analysis Result 08DGMW73-302 96-04605-2
Alkalinity	310.1	mg-$CaCO_3$/L	2	405	403
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	405	403
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	259	253
Color	110.2	Color Unit	1	N.D.	N.D.
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	9.6	9.5
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	49	51
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,050	1,040
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.	N.D.
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	66.0	70.0
Carbon, Total Organic (TOC)	415.1	mg/L	1	1	1
CLP: VOC by GC/MS					
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	5	5
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	0.8J	0.9J

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 08DGMW73-002 96-04605-1	08DGMW73-302 96-04605-2
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	2	2
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	N.D.	N.D.
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	9	10
Toluene	CLP-VOC	μg/L	1	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	62	62
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 22DBMW47-002 96-04605-3	24NEW1-002 96-04605-4	TB-DP-12-2-96 96-04605-5
Alkalinity	310.1	mg-$CaCO_3$/L	2	192	170	-
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	192	170	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	-
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.	-
Chloride Cl^- by IC	300.0	mg/L	0.2	219	150	-
Color	110.2	Color Unit	1	N.D.	N.D.	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	16.5	9.2	-
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	-
Silica (SiO_2) dissolved	370.1	mg/L	1	58	54	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,010	865	-
Solids, Total Suspended (TSS)	160.2	mg/L	4	N.D.	N.D.	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	160	186	-
Carbon, Total Organic (TOC)	415.1	mg/L	1	N.D.	N.D.	-

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 22DBMW47-002 96-04605-3	24NEW1-002 96-04605-4	TB-DP-12-2-96 96-04605-5
CLP: VOC by GC/MS						
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	3	N.D.	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	2	N.D.	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	3	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	5	2	N.D.
Toluene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	990	102	N.D.
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	15	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 08DGMW73-002 96-04605-1	08DGMW73-302 96-04605-2	24NEW1-002 96-04605-4
CLP Metals (Full CLP 23 metals)						
Aluminum	CLP-Metal	µg/L	200	22.0J	15.5J	14.2J
Antimony	CLP-Metal	µg/L	60	N.D.	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	2.8J	3.1J	2.1J
Barium	CLP-Metal	µg/L	200	169J	166J	42.5J
Beryllium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	N.D.	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	113,000	111,000	120,000
Chromium	CLP-Metal	µg/L	10	5.7J	4.3J	4.3J
Cobalt	CLP-Metal	µg/L	50	2.5J	1.8J	3.1J
Copper	CLP-Metal	µg/L	25	N.D.	N.D.	N.D.
Iron	CLP-Metal	µg/L	100	98.3J	59.5J	37.0J
Lead	CLP-Metal	µg/L	5	1J	1J	2J
Magnesium	CLP-Metal	µg/L	5000	29,000	28,000	32,000
Manganese	CLP-Metal	µg/L	15	9.6J	7.0J	20
Mercury	CLP-Metal	µg/L	0.2	N.D.	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	97	90	250
Potassium	CLP-Metal	µg/L	5000	2850J	2750J	3140J
Selenium	CLP-Metal	µg/L	5	N.D.	N.D.	12
Silver	CLP-Metal	µg/L	10	N.D.	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	206,000	202,000	89,000
Thallium	CLP-Metal	µg/L	10	2.5J	2.1J	2.4J
Vanadium	CLP-Metal	µg/L	50	23J	22J	17J
Zinc	CLP-Metal	µg/L	20	5.0J	9.9J	6.4J
Chromium (VI)	7196	mg/L	0.002	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL	Analysis Result 22DBMW47-002 96-04605-3
CLP: Semi-VOC by GC/MS				
Acenaphthene	CLP-SVOC	µg/L	10	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 22DBMW47-002 96-04605-3
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.
Fluorene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.
Naphthalene	CLP-SVOC	µg/L	10	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 22DBMW47-002 96-04605-3
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-001

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [illegible]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GEN CHEM	TREATABILITY PARAMETERS	Herbicides (8150)	Pesticides (CLP)	Metals (CLP) / CYANIDE	TPH GRO / TPH DIESEL	REMARKS	PRESERVATIVE USED
24NEW1-002	12/2/96	1440		✓	H_2O			2		1	3			2		*General Chemistry includes	
22DBMW47-002	12/2/96	1325		✓	H_2O			2		1	3					TDS, nitrate/nitrite as N,	
08DGMW73-302	12/2/96	1635		✓	H_2O			2		1	3			2		sulfate, chloride, carbonate,	
08DGMW73-002	12/2/96	1615		✓	H_2O			2		1	3			2		bicarbonate, alkalinity.	
																*Treatability parameters include	
																COD, TOC, Ammonia, Nitrogen	
																phosphate, silica, TSS, Color	
																NFESC QC Level D for all	
																samples	
																-Metal samples have been	
																field sampled	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Purnell	12/3/96 8:25				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[illegible]	12/3/96 8:25				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
ARCL Courier				ARCL LABS Chino CA. 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964621
Collected by: Pat Russell
Collected on: 12/03/96

Received: 12/04/96
Extracted: 12/04-06/96
Tested: 12/04-12/96
Reported: 12/13/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DBMW54-002 96-04621-1	19DGMW85-002 96-04621-2	19DGMW86-002 96-04621-3
Alkalinity	310.1	mg-$CaCO_3$/L	2	160	155	177
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	160	155	177
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	20	-
Chloride Cl^- by IC	300.0	mg/L	0.2	129	174	203
Color	110.2	Color Unit	1	1	2	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	10.6	12.3	11.8
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	-
Silica (SiO_2) dissolved	370.1	mg/L	1	63	57	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	771	847	990
Solids, Total Suspended (TSS)	160.2	mg/L	4	15	82	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	172	268	313
Carbon, Total Organic (TOC)	415.1	mg/L	1	N.D.	N.D.	-

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DGMW86-302 96-04621-4	24NEW4-002 96-04621-6	24NEW7-002 96-04621-7	24NEW8-002 96-04621-9
Alkalinity	310.1	mg-$CaCO_3$/L	2	177	170	179	164
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	-	N.D.	N.D.	N.D.
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	177	170	179	164
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	-	26	20	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	207	252	300	278
Color	110.2	Color Unit	1	-	2	2	1
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	11.7	13.5	22.0	16.5
Phosphorus, Orthophosphate	300.0	mg/L	0.1	-	N.D.	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	-	58	57	49
Solids, Total Dissolved (TDS)	160.1	mg/L	10	949	939	1,590	1,160
Solids, Total Suspended (TSS)	160.2	mg/L	4	-	146	389	22
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	313	179	510	290
Carbon, Total Organic (TOC)	415.1	mg/L	1	-	N.D.	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DGMW86-302 96-04621-4	24NEW4-002 96-04621-6	24NEW7-002 96-04621-7	24NEW8-002 96-04621-9
CLP Metals (Full CLP 23 metals)							
Aluminum	CLP-Metal	µg/L	200	-	25.3J	13.1J	17.6J
Antimony	CLP-Metal	µg/L	60	-	N.D.	N.D.	N.D.
Arsenic	CLP-Metal	µg/L	10	-	N.D.	N.D.	N.D.
Barium	CLP-Metal	µg/L	200	-	49.7J	26.4J	25.4J
Beryllium	CLP-Metal	µg/L	5	-	N.D.	N.D.	N.D.
Cadmium	CLP-Metal	µg/L	5	-	N.D.	N.D.	N.D.
Calcium	CLP-Metal	µg/L	5000	-	130,000	221,000	158,000
Chromium	CLP-Metal	µg/L	10	-	7.5J	9.3J	5.2J
Cobalt	CLP-Metal	µg/L	50	-	1.3J	4.2J	1.8J
Copper	CLP-Metal	µg/L	25	-	N.D.	N.D.	N.D.
Iron	CLP-Metal	µg/L	100	-	63.8J	380	62.4J
Lead	CLP-Metal	µg/L	5	-	2J	2J	2J
Magnesium	CLP-Metal	µg/L	5000	-	35,100	63,400	45,900
Manganese	CLP-Metal	µg/L	15	-	14J	71	9.5J
Mercury	CLP-Metal	µg/L	0.2	-	N.D.	N.D.	N.D.
Nickel	CLP-Metal	µg/L	40	-	65	290	170
Potassium	CLP-Metal	µg/L	5000	-	2920J	2820J	2700J
Selenium	CLP-Metal	µg/L	5	-	6	41	34
Silver	CLP-Metal	µg/L	10	-	N.D.	N.D.	N.D.
Sodium	CLP-Metal	µg/L	5000	-	87,300	130,000	130,000
Thallium	CLP-Metal	µg/L	10	-	3.3J	3.8J	2.4J
Vanadium	CLP-Metal	µg/L	50	-	14J	10J	11J
Zinc	CLP-Metal	µg/L	20	-	N.D.	5.5J	4.8J
Chromium (VI)	7196	mg/L	0.002	-	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DGMW86-902 96-04621-5	24NEW7-902 96-04621-8
TPH: Gasoline	M8015	mg/L	0.05	N.D.	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DGMW86-902 96-04621-5	24NEW7-902 96-04621-8
CLP: Semi-VOC by GC/MS					
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	3.8J	1.5J
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 19DGMW86-902 96-04621-5	24NEW7-902 96-04621-8
Fluorene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.	N.D.
Naphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Phenol	CLP-SVOC	µg/L	10	N.D.	N.D.
Pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL	Analysis Result 19DBMW54-002 96-04621-1	19DGMW85-002 96-04621-2	19DGMW86-002 96-04621-3	19DGMW86-302 96-04621-4
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL	Analysis Result 19DBMW54-002 96-04621-1	19DGMW85-002 96-04621-2	19DGMW86-002 96-04621-3	19DGMW86-302 96-04621-4
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	3	4	5	10
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	2	5	10	11
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

Component Analyzed	Method	Unit	CRDL	Analysis Result 19DGMW86-902 96-04621-5	24NEW4-002 96-04621-6	24NEW7-002 96-04621-7
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.

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Component Analyzed	Method	Unit	CRDL	Analysis Result 19DGMW86-902 96-04621-5	24NEW4-002 96-04621-6	24NEW7-002 96-04621-7
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	2	0.9J
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	N.D.	1	0.9J
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	1	4
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	N.D.	2	1
Toluene	CLP-VOC	μg/L	1	1	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	N.D.	1,110	33
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	4.3J	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 24NEW7-902 96-04621-8	24NEW8-002 96-04621-9	TB ND 12-4-96 96-04621-10
CLP: VOC by GC/MS						
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	2	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	N.D.	0.7J	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	1	N.D.	2
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	N.D.	1	N.D.
Toluene	CLP-VOC	μg/L	1	1	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	2	4	0.6J
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
[a] Results to be confirmed.

Respectfully submitted,

Jack Y. Zhang, Ph. D.,
President
Applied P & Ch Laboratory

FIL - [illegible]

Sheet 1 of 1

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GEN CHEM*	TREATABILITY PARAMETERS	HERBICIDES (8150)	PESTICIDES (CLP)	METALS (CLP)/CHROME III	TPH DIESEL/TPH GAS	REMARKS Non Dedicated team	PRESERVATIVE USED
BT	19DGMW85-002	12/3/96	1040		✓	H_2O		6	2		1	3					*GEN CHEM includes TDS,	
BT	24NEW7-002	12/3/96	1425		✓	H_2O		8	2		1	3			2		NITRATE/NITRITE AS N,	
BT	24NEW4-002	12/3/96	1615		✓	H_2O		8	2		1	3			2		SULFATE, CHLORIDE, CARBONATE	
BT	24NEW8-002	12/3/96	1305		✓	H_2O		8	2		1	3			2		bi-carbonate, alkalinity.	
BT	19DBMW54-002	12/3/96	1150		✓	H_2O		6	2		1	3					-Treatability Parameters include	
BT	19DGMW86-002	12/3/96	0930		✓	H_2O		3	2		1						COD, TOC, AMMONIA, Nitrogen,	
BT	19DGMW86-302	12/3/96	0950		✓	H_2O		3	2		1						Phosphate, SILICA, TSS, Color	
BT	24NEW7-902	12/3/96	1345		✓	H_2O		5 3	2		1					2		
BT	19DGMW86-902	12/3/96	0850		✓	H_2O		5	2		1					2	-NEESC Level D All samples	
																	-Metal Samples have been	
																	Filtered in the field.	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	12/4/96 8:46				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12/4/96 8:46				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL COURIER				APCL LAB CHINO CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964636
Collected by:
Collected on: 12/04,05/96

Received: 12/05/96
Extracted: 12/05-06/96
Tested: 12/05-13/96
Reported: 12/13/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 06UGMW28-002 96-04636-1	06UGMW28-302 96-04636-2	09DGMW75-002 96-04636-3	09DGMW75-502 96-04636-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	181	181	188	N.D.
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	181	181	188	N.D.
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	586	639	295	N.D.
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	20.9	20.6	23.7	N.D.
Solids, Total Dissolved (TDS)	160.1	mg/L	10	2,010	1,990	1,310	N.D.
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	531	574	481	N.D.
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	3	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	2	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	3	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	1	N.D.	N.D.
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	2	2	9	1
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	1J
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	9	9	468	2
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	1.4J	1.7J	12	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 10DGMW77-002 96-04636-5	15DBMW51-002 96-04636-6	18BGMW05D-002 96-04636-7	TB-ND-12-5-96 96-04636-8
Alkalinity	310.1	mg-$CaCO_3$/L	2	177	556	229	-
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	177	556	229	-
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.	-
Chloride Cl^- by IC	300.0	mg/L	0.2	247	504	256	-
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	15.9	15.0 [b]	7.5	-
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,040	3,050	928	-
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	323	1,210	279	-
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	12	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	0.7J	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	1.5J	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	2	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	2	1	0.5J	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	0.7J	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	1	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	N.D.	N.D.	1	2
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	3	6	19	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	2	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	105	39	23	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	2	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	1.3J	N.D.	N.D.	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 09DGMW75-002 96-04636-3	09DGMW75-502 96-04636-4	10DGMW77-002 96-04636-5	15DBMW51-002 96-04636-6
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.	N.D.	43
Color	110.2	Color Unit	1	1	N.D.	1	N.D.
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	54	N.D.	54	44
Solids, Total Suspended (TSS)	160.2	mg/L	4	9	N.D.	14	13
Carbon, Total Organic (TOC)	415.1	mg/L	1	3	2	1	4
CLP Metals (Full CLP 23 metals)							
Aluminum	CLP-Metal	μg/L	200	-	-	-	18.5J
Antimony	CLP-Metal	μg/L	60	-	-	-	N.D.
Arsenic	CLP-Metal	μg/L	10	-	-	-	9.4J
Barium	CLP-Metal	μg/L	200	-	-	-	24.9J
Beryllium	CLP-Metal	μg/L	5	-	-	-	N.D.
Cadmium	CLP-Metal	μg/L	5	-	-	-	1J
Calcium	CLP-Metal	μg/L	5000	-	-	-	380,000
Chromium	CLP-Metal	μg/L	10	-	-	-	N.D.
Cobalt	CLP-Metal	μg/L	50	-	-	-	1.4J
Copper	CLP-Metal	μg/L	25	-	-	-	1.9J
Iron	CLP-Metal	μg/L	100	-	-	-	20.2J
Lead	CLP-Metal	μg/L	5	-	-	-	2J
Magnesium	CLP-Metal	μg/L	5000	-	-	-	169,000
Manganese	CLP-Metal	μg/L	15	-	-	-	705
Mercury	CLP-Metal	μg/L	0.2	-	-	-	N.D.
Nickel	CLP-Metal	μg/L	40	-	-	-	11J
Potassium	CLP-Metal	μg/L	5000	-	-	-	5,910
Selenium	CLP-Metal	μg/L	5	-	-	-	16
Silver	CLP-Metal	μg/L	10	-	-	-	N.D.
Sodium	CLP-Metal	μg/L	5000	-	-	-	203,000
Thallium	CLP-Metal	μg/L	10	-	-	-	2.8J
Vanadium	CLP-Metal	μg/L	50	-	-	-	15J
Zinc	CLP-Metal	μg/L	20	-	-	-	49
Chromium (VI)	7196	mg/L	0.002	-	-	-	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 09DGMW75-002 96-04636-3	09DGMW75-502 96-04636-4	10DGMW77-002 96-04636-5	15DBMW51-002 96-04636-6
CLP: Semi-VOC by GC/MS							
Acenaphthene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	-	-	1.6J	2.2J
Carbazole	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 09DGMW75-002 96-04636-3	09DGMW75-502 96-04636-4	10DGMW77-002 96-04636-5	15DBMW51-002 96-04636-6
Fluorene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Isophorone	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Naphthalene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Phenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
Pyrene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	-	-	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	-	-	N.D.	N.D.

Component Analyzed	Method	Unit	PQL	Analysis Result 18BGMW05D-002 96-04636-7
TPH: Gasoline	M8015	mg/L	0.05	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 06UGMW28-002 96-04636-1	06UGMW28-302 96-04636-2
CLP: Semi-VOC by GC/MS					
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	1.7J	1.4J
Carbazole	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 06UGMW28-002 96-04636-1	06UGMW28-302 96-04636-2
Fluorene	CLP-SVOC	μg/L	10	N.D.	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	N.D.	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

(b) Sample contains 5.5 mg/L of Nitrite as analyzed by 354.1.

Respectfully submitted,

Jack Y. Zhang, Ph. D.,
President
Applied P & Ch Laboratory

FTL- Pat Russell

1 of 1

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GEN CHEM*	TREATABILITY PARAMETERS	HERBICIDES (8150)	PESTICIDES (CLP)	METALS (CLP)/CHROME VI	TPH DIESEL/TPH GAS	REMARKS Non Dedicated Pump Team	PRESERVATIVE USED
FT	18BGMWOSD-002	12-4-96	1035		✓	H_2O		7	2	1	1					3	Gen Chem includes TDS	
FT	10DGMW77-002	12/4/96	1140		✓	H_2O		7	2	1	1	3					Nitrate/Nitrite as N,	
FT	09DGMW75-002	12/4/96	1350		✓	H_2O		6	2		1	3					Sulfate, chloride, carbonate	
BT	06UGMW28-002	12/4/96	0845		✓	H_2O		4	2	1	1						bi-carbonate, alkalinity.	
BT	06UGMW28-302	12/4/96	0905		✓	H_2O		4	2	1	1						- Treatability Parameters include	
BT	15DBMW51-002	12/4/96	1500		✓	H_2O		9	2	1	1	3			2		COD, TOC, Ammonia, Nitrogen	
BT	09DGMW75-502	12/4/96	1245		✓	H_2O		6	2		1	3					Phosphate, Silica, TSS, Color	
	TB-ND-12-5-96	12/5/96						1	1								- NFESC Level D All samples	
																	- Metals have been field filtered	
																	PRESERVATIVES	
																	VOC	HCL
																	METALS	HNO_3
																	COD, NH_4, TOC	H_2SO_4

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	12/5/96 800am				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12-5-96 8:00am				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL COURIER	1 cooler			APCL LAB CHINO CA. 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964656
Collected by:
Collected on: 12/05-06/96

Received: 12/06/96
Extracted: N/A
Tested: 12/06-13/96
Reported: 12/16/96

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 18BGMW23-002 96-04656-2	Analysis Result 18BGMW23-302 96-04656-3
Alkalinity	310.1	mg-$CaCO_3$/L	2	149	149
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	149	149
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	204	208
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	23.1	22.7
Solids, Total Dissolved (TDS)	160.1	mg/L	10	918	933
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	340	344

Component Analyzed	Method	Unit	PQL	Analysis Result 18PS4-002 96-04656-5	Analysis Result 18PS4-302 96-04656-6	Analysis Result 18PS4-502 96-04656-7
Alkalinity	310.1	mg-$CaCO_3$/L	2	222	216	N.D.
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	222	216	N.D.
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	294	289	N.D.
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	7.1	7.0	N.D.
Solids, Total Dissolved (TDS)	160.1	mg/L	10	1,060	1,030	N.D.
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	297	297	N.D.

Component Analyzed	Method	Unit	PQL	Analysis Result 03DGMW64-002R 96-04656-1
Chromium (VI)	7196	mg/L	0.002	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18BGMW23-002 96-04656-2	18BGMW23-302 96-04656-3	18BGMW23-802 96-04656-4	18PS4-002 96-04656-5
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	0.7J	N.D.	93	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	383	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	130	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	3	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	330	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	200	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	393	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	173	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	220	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	3	2	389	2
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	336	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	0.7J	0.8J	124	11
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	325	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	201	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	154	N.D.
Trichloroethene	CLP-VOC	µg/L	1	2	2	257	7
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	247	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	707	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18PS4-302 96-04656-6	18PS4-502 96-04656-7	18PS4-802 96-04656-8
CLP: VOC by GC/MS						
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	18
Benzene	CLP-VOC	µg/L	1	N.D.	0.5J	9
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	11
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	8.3J
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	17
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	19
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	23
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	12
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	6
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	1	3	22
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	4.8J
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	13	N.D.	19
Toluene	CLP-VOC	µg/L	1	N.D.	0.8J	11
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	19
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	9
Trichloroethene	CLP-VOC	µg/L	1	8	N.D.	6
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	6
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	27
Freon-113	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 02NEW13-002 96-04656-9	02NEW14-002 96-04656-10	TB-ND-12/6/96 96-04656-11
CLP: VOC by GC/MS						
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	5	N.D.	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	2	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	5	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	3	2	1
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	8	8	N.D.
Toluene	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	2	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	62	3	N.D.
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
[a] Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

FIL - PATRO 11

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS ELTORO GWM

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	GEN CHEM *	TREATABILITY PARAMETERS *	HERBICIDES (8150)	PESTICIDES (CLP)	Metals (CLP)/Chrome VI	TPH Diesel/TPH GAS	REMARKS Non Dedicated Pump Team	PRESERVATIVE USED
BT	18PS4-502	12/5/96	12:15		✓	H_2O		2		1						*GEN CHEM includes TDS,	
BT	18PS4-002	12/5/96	1300		✓	H_2O		2		1						NITRATE/NITRITE as N, Sulfate	
BT	18PS4-302	12/5/96	1330		✓	H_2O		2		1						chloride, carbonate, bicarbonate	
BT	18BGMW23-302	12/5/96	11:30		✓	H_2O		2		1						alkalinity	
BT	18BGMW23-002	12/5/96	11:10		✓	H_2O		2		1						*TREATABILITY PARAMETERS include	
BT	03DGMW04-002R	12/5/96	1618		✓	H_2O							1			COD, TOC, Ammonia, Nitrogen,	
BR	18PS4-802	12/6/96	9:00					2								Phosphate, Silica, TSS, Color	
BR	18BGMW23-802	12/6/96	9:00					2								-NFESC Level D All samples	
	TB-ND-12/6/96	12/6/96						2								-Metals/Chrome VI have been	
																filtered in the field	
																Preservatives	
																VOC	HCL
																Metals	HNO_3
																COD, NH4, TOC	H_2SO_4

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	12/6/96 9:45				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12/6/96 9:45				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL Courier	1 Cooler			APCL LAB CHINO CA. 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-971072
Collected by: M.O.
Collected on: 01/08/97

Received: 01/08/97
Extracted: 01/10-13/97
Tested: 01/10-17/97
Reported: 01/21/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 16DGMW81-902 97-01072-1	18PS3-002 97-01072-2	02NEW7-002 97-01072-3	16DGMW81-002 97-01072-4
Alkalinity	310.1	mg-$CaCO_3$/L	2	-	187	275	187
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	-	187	275	187
Carbonate	SM2320B	mg-$CaCO_3$/L	2	-	N.D.	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	-	200	60.0	267
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	-	8.2	8.5	18.3
Solids, Total Dissolved (TDS)	160.1	mg/L	10	-	763	682	3,380
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	-	125	176	638
CLP: VOC by GC/MS							
Acetone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Benzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromodichloromethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromoform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Bromomethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon disulfide	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chlorobenzene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Chloroform	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Chloromethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Ethylbenzene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
2-Hexanone	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Methylene chloride	CLP-VOC	µg/L	1	2	2	1	1
Styrene	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.
Tetrachloroethene	CLP-VOC	µg/L	1	N.D.	17	N.D.	N.D.
Toluene	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,1-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Trichloroethene	CLP-VOC	µg/L	1	N.D.	9	2	N.D.
Vinyl chloride	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Xylenes (total)	CLP-VOC	µg/L	1	N.D.	N.D.	N.D.	N.D.
Freon-113 [a]	CLP-VOC	µg/L	10	N.D.	N.D.	N.D.	N.D.

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW7-002 97-01072-3	Analysis Result 16DGMW81-002 97-01072-4
Ammonia (NH_4^+-N)	350.2	mg/L	0.2	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.4	mg-O_2/L	20	N.D.	N.D.
Color	110.2	Color Unit	1	N.D.	N.D.
Phosphorus, Orthophosphate	300.0	mg/L	0.1	N.D.	N.D.
Silica (SiO_2) dissolved	370.1	mg/L	1	44	54
Solids, Total Suspended (TSS)	160.2	mg/L	4	12	N.D.
Carbon, Total Organic (TOC)	415.1	mg/L	1	5	5
CLP Metals (Full CLP 23 metals)					
Aluminum	CLP-Metal	μg/L	200	24.0J	44.3J
Antimony	CLP-Metal	μg/L	60	2.5J	N.D.
Arsenic	CLP-Metal	μg/L	10	5.8J	3.3J
Barium	CLP-Metal	μg/L	200	90.0J	37.5J
Beryllium	CLP-Metal	μg/L	5	N.D.	N.D.
Cadmium	CLP-Metal	μg/L	5	0.6J	0.8J
Calcium	CLP-Metal	μg/L	5000	125,000	197,000
Chromium	CLP-Metal	μg/L	10	2.7J	8.0J
Cobalt	CLP-Metal	μg/L	50	N.D.	1.9J
Copper	CLP-Metal	μg/L	25	3.3J	2.0J
Iron	CLP-Metal	μg/L	100	34.2J	82.6J
Lead	CLP-Metal	μg/L	5	2J	3J
Magnesium	CLP-Metal	μg/L	5000	32,800	88,800
Manganese	CLP-Metal	μg/L	15	2.9J	11J
Mercury	CLP-Metal	μg/L	0.2	N.D.	N.D.
Nickel	CLP-Metal	μg/L	40	2.8J	170
Potassium	CLP-Metal	μg/L	5000	1250J	5,050
Selenium	CLP-Metal	μg/L	5	16	122
Silver	CLP-Metal	μg/L	10	N.D.	N.D.
Sodium	CLP-Metal	μg/L	5000	68,500	169,000
Thallium	CLP-Metal	μg/L	10	N.D.	N.D.
Vanadium	CLP-Metal	μg/L	50	14J	19J
Zinc	CLP-Metal	μg/L	20	11J	20
Chromium (VI)	7196	mg/L	0.002	N.D.	0.004
TPH: Gasoline	M8015	mg/L	0.05	-	N.D.
TPH: Diesel	M8015	mg/L	0.25	-	N.D.

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW7-002 97-01072-3	16DGMW81-002 97-01072-4
CLP: Semi-VOC by GC/MS					
Acenaphthene	CLP-SVOC	µg/L	10	N.D.	-
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.	-
Anthracene	CLP-SVOC	µg/L	10	N.D.	-
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.	-
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.	-
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.	-
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.	-
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.	-
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.	-
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.	-
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.	-
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.	-
Carbazole	CLP-SVOC	µg/L	10	N.D.	-
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.	-
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.	-
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.	-
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.	-
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.	-
Chrysene	CLP-SVOC	µg/L	10	N.D.	-
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.	-
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.	-
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.	-
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.	-
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.	-
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.	-
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.	-
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.	-
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.	-
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.	-
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.	-
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.	-
Fluoranthene	CLP-SVOC	µg/L	10	N.D.	-
Fluorene	CLP-SVOC	µg/L	10	N.D.	-
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.	-
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.	-
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.	-
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.	-
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.	-
Isophorone	CLP-SVOC	µg/L	10	N.D.	-
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.	-

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW7-002 97-01072-3	16DGMW81-002 97-01072-4
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.	-
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.	-
Naphthalene	CLP-SVOC	µg/L	10	N.D.	-
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.	-
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.	-
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.	-
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.	-
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.	-
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.	-
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.	-
Phenanthrene	CLP-SVOC	µg/L	10	N.D.	-
Phenol	CLP-SVOC	µg/L	10	N.D.	-
Pyrene	CLP-SVOC	µg/L	10	N.D.	-
1,2,4-Trichlorobenzene	CLP-SVOC	µg/L	10	N.D.	-
2,4,5-Trichlorophenol	CLP-SVOC	µg/L	25	N.D.	-
2,4,6-Trichlorophenol	CLP-SVOC	µg/L	10	N.D.	-
CLP: Organochlorine pesticides & PCB					
Aldrin	CLP-Pest	µg/L	0.050	N.D.	-
beta-BHC	CLP-Pest	µg/L	0.050	N.D.	-
alpha-BHC	CLP-Pest	µg/L	0.050	N.D.	-
delta-BHC	CLP-Pest	µg/L	0.050	N.D.	-
gamma-BHC (Lindane)	CLP-Pest	µg/L	0.050	N.D.	-
alpha-Chlordane	CLP-Pest	µg/L	0.050	N.D.	-
gamma-Chlordane	CLP-Pest	µg/L	0.050	N.D.	-
4,4'-DDD	CLP-Pest	µg/L	0.10	N.D.	-
4,4'-DDE	CLP-Pest	µg/L	0.10	N.D.	-
4,4'-DDT	CLP-Pest	µg/L	0.10	N.D.	-
Dieldrin	CLP-Pest	µg/L	0.10	N.D.	-
Endosulfan I	CLP-Pest	µg/L	0.050	N.D.	-
Endosulfan II	CLP-Pest	µg/L	0.10	N.D.	-
Endosulfan sulfate	CLP-Pest	µg/L	0.10	N.D.	-
Endrin	CLP-Pest	µg/L	0.10	N.D.	-
Endrin aldehyde	CLP-Pest	µg/L	0.10	N.D.	-
Endrin ketone	CLP-Pest	µg/L	0.10	N.D.	-
Heptachlor	CLP-Pest	µg/L	0.050	N.D.	-
Heptachlor epoxide	CLP-Pest	µg/L	0.050	N.D.	-
Methoxychlor	CLP-Pest	µg/L	0.50	N.D.	-
Toxaphene	CLP-Pest	µg/L	5.0	N.D.	-
Aroclor-1016 (PCB-1016)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1221 (PCB-1221)	CLP-Pest	µg/L	2.0	N.D.	-
Aroclor-1232 (PCB-1232)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1242 (PCB-1242)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1248 (PCB-1248)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1254 (PCB-1254)	CLP-Pest	µg/L	1.0	N.D.	-
Aroclor-1260 (PCB-1260)	CLP-Pest	µg/L	1.0	N.D.	-

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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 02NEW7-002 97-01072-3	16DGMW81-002 97-01072-4
Chlorinated herbicides					
2,4-D	8150	µg/L	0.5	N.D.	-
2,4-DB	8150	µg/L	0.5	N.D.	-
Dalapon (dichloroacetic acid)	8150	µg/L	1	N.D.	-
Dicamba	8150	µg/L	0.5	N.D.	-
Dichloroprop	8150	µg/L	0.5	N.D.	-
Dinoseb (DNBP)	8150	µg/L	0.5	N.D.	-
2,4,5-T	8150	µg/L	0.5	N.D.	-
2,4,5-TP (Silvex)	8150	µg/L	0.5	N.D.	-

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 16DGMW81-902 97-01072-1
TPH: Gasoline	M8015	mg/L	0.05	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.
CLP: Semi-VOC by GC/MS				
Acenaphthene	CLP-SVOC	µg/L	10	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 16DGMW81-902 97-01072-1
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.
Fluorene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobenzene	CLP-SVOC	µg/L	10	N.D.
Hexachlorobutadiene	CLP-SVOC	µg/L	10	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	µg/L	10	N.D.
Hexachloroethane	CLP-SVOC	µg/L	10	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	µg/L	10	N.D.
Isophorone	CLP-SVOC	µg/L	10	N.D.
2-Methylnaphthalene	CLP-SVOC	µg/L	10	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	µg/L	10	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	µg/L	10	N.D.
Naphthalene	CLP-SVOC	µg/L	10	N.D.
2-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
3-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
4-Nitroaniline	CLP-SVOC	µg/L	25	N.D.
Nitrobenzene	CLP-SVOC	µg/L	10	N.D.
2-Nitrophenol	CLP-SVOC	µg/L	10	N.D.
4-Nitrophenol	CLP-SVOC	µg/L	25	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	µg/L	10	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	µg/L	10	N.D.
Pentachlorophenol (PCP)	CLP-SVOC	µg/L	25	N.D.
Phenanthrene	CLP-SVOC	µg/L	10	N.D.
Phenol	CLP-SVOC	µg/L	10	N.D.
Pyrene	CLP-SVOC	µg/L	10	N.D.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 16DGMW81-902 97-01072-1
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	Gen Chemistry *	Treatability Parameters *	Herbicides (8150)	Pesticides (CLP)	Metals (CLP) Chrome (VI) - Cr+6	TPH-Diesel/TPH-Gas	REMARKS	PRESERVATIVE USED
02NEW7-002	1-8-97	1300		X	H_2O		11	2	1	1	3	1	1	2		*General Chemistry includes	
16DGMW81-002	1-8-97	950		X	H_2O		11	2		1	3			2	3	TDS, NITRATE, NITRITE AS N,	
16DGMW81-902	1-8-97	1020		X	H_2O		6	2	1						3	Sulfate, chloride, carbonate	
18PS3-002	1-8-97	1425		X	H_2O		3	2		1						bi-carbonate, alkalinity.	
																* Treatability parameters	
																COD, TOC, Ammonia Nitrogen	
																Phosphate, silica, TSS, Color	
																- NFESC level D all samples	
																- Metals have been field	
																filtered	
																Preservatives	
																VOC	HCL
																METALS	HNO_3
																COD, NH_4, TOC	H_2SO_4

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	1/8/97 1652				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	1/8/97 16:52				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
APCL COURIER 2-COOLERS				APCL Chino, CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field File

Applied P & Ch Laboratory
3760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-971075
Collected by:
Collected on: 01/09/97

Received: 01/09/97
Extracted: 01/10-11/97
Tested: 01/13-14/97
Reported: 01/20/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 18BGMW05A-002 97-01075-1	18BGMW18-002 97-01075-2
Alkalinity	310.1	mg-$CaCO_3$/L	2	77	320
Bicarbonate	SM2320B	mg-$CaCO_3$/L	2	77	320
Carbonate	SM2320B	mg-$CaCO_3$/L	2	N.D.	N.D.
Chloride Cl^- by IC	300.0	mg/L	0.2	1,660	115
Nitrate/Nitrite, as N	300.0	mg-N/L	0.1	N.D.	23.3
Solids, Total Dissolved (TDS)	160.1	mg/L	10	3,440	1,040
Sulfate (SO_4^{--}), by IC	300.0	mg/L	0.5	397	301
TPH: Gasoline	M8015	mg/L	0.05	N.D.	N.D.
TPH: Diesel	M8015	mg/L	0.25	N.D.	N.D.
CLP: VOC by GC/MS					
Acetone	CLP-VOC	μg/L	10	N.D.	N.D.
Benzene	CLP-VOC	μg/L	1	N.D.	N.D.
Bromodichloromethane	CLP-VOC	μg/L	1	N.D.	N.D.
Bromoform	CLP-VOC	μg/L	1	N.D.	N.D.
Bromomethane	CLP-VOC	μg/L	10	N.D.	N.D.
2-Butanone (MEK)	CLP-VOC	μg/L	10	N.D.	N.D.
Carbon disulfide	CLP-VOC	μg/L	10	N.D.	N.D.
Carbon tetrachloride	CLP-VOC	μg/L	1	N.D.	N.D.
Chlorobenzene	CLP-VOC	μg/L	10	N.D.	N.D.
Chlorodibromomethane	CLP-VOC	μg/L	1	N.D.	N.D.
Chloroethane	CLP-VOC	μg/L	10	N.D.	N.D.
Chloroform	CLP-VOC	μg/L	1	N.D.	N.D.
Chloromethane	CLP-VOC	μg/L	10	N.D.	N.D.
1,1-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
1,2-Dichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
1,1-Dichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.
1,2-Dichloropropane	CLP-VOC	μg/L	1	N.D.	N.D.
cis-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.
trans-1,3-Dichloropropene	CLP-VOC	μg/L	10	N.D.	N.D.
1,2-Dichloroethene (Total)	CLP-VOC	μg/L	1	N.D.	N.D.
Ethylbenzene	CLP-VOC	μg/L	1	N.D.	N.D.
2-Hexanone	CLP-VOC	μg/L	10	N.D.	N.D.
4-Methyl-2-pentanone (MIBK)	CLP-VOC	μg/L	10	N.D.	N.D.
Methylene chloride	CLP-VOC	μg/L	1	1	1
Styrene	CLP-VOC	μg/L	10	N.D.	N.D.
1,1,2,2-Tetrachloroethane	CLP-VOC	μg/L	10	N.D.	N.D.
Tetrachloroethene	CLP-VOC	μg/L	1	N.D.	N.D.
Toluene	CLP-VOC	μg/L	1	0.8J	N.D.
1,1,1-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
1,1,2-Trichloroethane	CLP-VOC	μg/L	1	N.D.	N.D.
Trichloroethene	CLP-VOC	μg/L	1	N.D.	N.D.
Vinyl chloride	CLP-VOC	μg/L	1	N.D.	N.D.
Xylenes (total)	CLP-VOC	μg/L	1	N.D.	N.D.
Freon-113 [a]	CLP-VOC	μg/L	10	N.D.	N.D.

Applied P & Ch Laboratory
5760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18BGMW05A-002 97-01075-1
CLP: Semi-VOC by GC/MS				
Acenaphthene	CLP-SVOC	µg/L	10	N.D.
Acenaphthylene	CLP-SVOC	µg/L	10	N.D.
Anthracene	CLP-SVOC	µg/L	10	N.D.
Benz(a)anthracene	CLP-SVOC	µg/L	10	N.D.
Benzo(a)pyrene	CLP-SVOC	µg/L	10	N.D.
Benzo(b)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Benzo(g,h,i)perylene	CLP-SVOC	µg/L	10	N.D.
Benzo(k)fluoranthene	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethoxy) methane	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroethyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-chloroisopropyl) ether	CLP-SVOC	µg/L	10	N.D.
Bis(2-ethylhexyl) phthalate	CLP-SVOC	µg/L	10	N.D.
4-Bromophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Butyl Benzyl Phthalate (BBP)	CLP-SVOC	µg/L	10	N.D.
Carbazole	CLP-SVOC	µg/L	10	N.D.
4-Chloro-3-methylphenol	CLP-SVOC	µg/L	10	N.D.
4-Chloroaniline	CLP-SVOC	µg/L	10	N.D.
2-Chloronaphthalene	CLP-SVOC	µg/L	10	N.D.
2-Chlorophenol	CLP-SVOC	µg/L	10	N.D.
4-Chlorophenyl phenyl ether	CLP-SVOC	µg/L	10	N.D.
Chrysene	CLP-SVOC	µg/L	10	N.D.
Di-n-butyl phthalate (DBP)	CLP-SVOC	µg/L	10	N.D.
Di-n-octyl phthalate (DOP)	CLP-SVOC	µg/L	10	N.D.
Dibenz(a,h)anthracene	CLP-SVOC	µg/L	10	N.D.
Dibenzofuran	CLP-SVOC	µg/L	10	N.D.
1,2-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,3-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
1,4-Dichlorobenzene	CLP-SVOC	µg/L	10	N.D.
3,3'-Dichlorobenzidine	CLP-SVOC	µg/L	10	N.D.
2,4-Dichlorophenol	CLP-SVOC	µg/L	10	N.D.
Diethyl phthalate (DEP)	CLP-SVOC	µg/L	10	N.D.
Dimethyl phthalate (DMP)	CLP-SVOC	µg/L	10	N.D.
2,4-Dimethylphenol	CLP-SVOC	µg/L	10	N.D.
4,6-Dinitro-2-methylphenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrophenol	CLP-SVOC	µg/L	25	N.D.
2,4-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
2,6-Dinitrotoluene	CLP-SVOC	µg/L	10	N.D.
Fluoranthene	CLP-SVOC	µg/L	10	N.D.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
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APCL Analytical Report

Component Analyzed	Method	Unit	CRDL	Analysis Result 18BGMW05A-002 97-01075-1
Fluorene	CLP-SVOC	μg/L	10	N.D.
Hexachlorobenzene	CLP-SVOC	μg/L	10	N.D.
Hexachlorobutadiene	CLP-SVOC	μg/L	10	N.D.
Hexachlorocyclopentadiene	CLP-SVOC	μg/L	10	N.D.
Hexachloroethane	CLP-SVOC	μg/L	10	N.D.
Indeno(1,2,3-cd)pyrene	CLP-SVOC	μg/L	10	N.D.
Isophorone	CLP-SVOC	μg/L	10	N.D.
2-Methylnaphthalene	CLP-SVOC	μg/L	10	N.D.
3/4-Methylphenol (m/p-Cresol)	CLP-SVOC	μg/L	10	N.D.
2-Methylphenol (o-Cresol)	CLP-SVOC	μg/L	10	N.D.
Naphthalene	CLP-SVOC	μg/L	10	N.D.
2-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
3-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
4-Nitroaniline	CLP-SVOC	μg/L	25	N.D.
Nitrobenzene	CLP-SVOC	μg/L	10	N.D.
2-Nitrophenol	CLP-SVOC	μg/L	10	N.D.
4-Nitrophenol	CLP-SVOC	μg/L	25	N.D.
N-Nitroso-di-n-propylamine	CLP-SVOC	μg/L	10	N.D.
N-Nitrosodiphenylamine	CLP-SVOC	μg/L	10	5.6J
Pentachlorophenol (PCP)	CLP-SVOC	μg/L	25	N.D.
Phenanthrene	CLP-SVOC	μg/L	10	N.D.
Phenol	CLP-SVOC	μg/L	10	N.D.
Pyrene	CLP-SVOC	μg/L	10	N.D.
1,2,4-Trichlorobenzene	CLP-SVOC	μg/L	10	N.D.
2,4,5-Trichlorophenol	CLP-SVOC	μg/L	25	N.D.
2,4,6-Trichlorophenol	CLP-SVOC	μg/L	10	N.D.

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

(a) Additional compound per client's request.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	VOC (CLP)	SVOC (CLP)	Gen Chemistry*	TPH Diesel/TPH-GAS					REMARKS	PRESERVATIVE USED
18 BGMW18-002	1/9/97			X	H_2O		6	2		1	3					*Gen Chemistry - TDS	
18 BGMW05A-002	1/9/97			X	H_2O		7	2	1	1	3					NITRATE, NITRITE AS N	
																Sulfate, Chloride, CARBONATE	
																bi-CARBONATE, Alkalinity.	
																Preservatives	
																VOC	HCl

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	1/9/97 1440				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	1/9/97 14.40				
Airbill No. APCL COURIER		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory** APCL LAB Chino CA 909-590-1828	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

TRUESDAIL LABORATORY
ANALYTICAL REPORTS

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-971276
Collected by:
Collected on: 11/06/96

Received: 11/06/96
Extracted: N/A
Tested: 11/06-12/07/96
Reported: 02/12/97

Sample Description: Ground Water
Project Description: 6206-009 MCAS El Toro-GWM

Analysis of Water Samples*

Component Analyzed	Method	Unit	PQL	Analysis Result 02NEW03-002 97-01276-1	Analysis Result 02NEW06-002 97-01276-2
Gross Alpha	SM7110C	pCi/L		10.05 ±2.04	16.53 ±2.45
Gross Beta	900.0	pCi/L		6.97 ±2.63	6.84 ±2.58
Radon	913.0	pCi/L		341 ±14	239 ±18
Strontium	905.0	pCi/L		-0.024 ±0.13	-0.113 ±0.113

Component Analyzed	Method	Unit	PQL	Analysis Result 02NEW08A-002 97-01276-3	Analysis Result 02NEW12-002 97-01276-4	Analysis Result 18DW135-002 97-01276-5
Gross Alpha	SM7110C	pCi/L		24.20 ±2.83	9.83 ±2.02	-
Gross Beta	900.0	pCi/L		5.77 ±2.60	5.52 ± 2.52	-
Radon	913.0	pCi/L		601 ±21	215 ±16	585 ±20
Strontium	905.0	pCi/L		-0.058 ±0.122	-0.019 ±0.116	-0.183 ±0.292

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
* Subcontracted to Truesdail Laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWM

SAMPLERS: *(Signature)*

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADIUM (913)	STRONTIUM (905)								REMARKS	PRESERVATIVE USED
BT 18DW135-002	11-5-96	1540		✓	H_2O		2	1	1									
				~~✓~~ OA	~~H_2O~~	PR												

Relinquished by: *(Signature)*	Date / Time	Relinquished by: *(Signature)*	Date / Time	Relinquished by: *(Signature)*	Date / Time
Pat Russell	11/6/96 11:39				
Received by: *(Signature)*	**Date / Time**	**Received by: *(Signature)***	**Date / Time**	**Received by: *(Signature)***	**Date / Time**
Roger C. Cam	11-6-96 11:40				
Airbill No.		**Received for Laboratory by: *(Signature)***	**Date / Time**	**Laboratory**	
TRUESDAIL LAB COURIER					

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWM

SAMPLERS: (Signature)

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (9310)	GROSS BETA (9310)					REMARKS	PRESERVATIVE USED
									ANALYSIS REQUIRED									
Sm	02NEW12-002	11-7-96	1655		✓	H_2O		4	1	1	1	1						
Sm	02NEW06-002	11-7-96	1125		✓	H_2O		4	1	1	1	1						
Sm	02NEW03-002	11-7-96	1415		✓	H_2O		4	1	1	1	1					TRUESDAIL TO	
Sm	02NEW08A-002	11-7-96	1540		✓	H_2O		4	1	1	1	1					FAX COPY OF	
																	COC TO APCL	
																	909-590-1498	
							CDM Federal											

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/8/96 9:47				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
K. Tackmann	11.8.96 9:49				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUESDAIL COURIER - 1 COOLER				TRUESDAIL LAB 714 730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
3760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964325
Collected by:
Collected on: 11/04/96

Received: 11/05/96
Extracted: N/A
Tested: 11/05-12/05/96
Reported: 01/07/97

Sample Description: Water from MCAS El Toro
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	Analysis Result			
			02DGMW59-002 96-04325-1	02DGMW60-002 96-04325-2	02DGMW61-002 96-04325-3	02NEW1-002 96-04325-4
Gross Alpha [a]	SM7110C	pCi/L	12.51 ±2.13	32.16 ±3.19	18.24 ±2.49	0.89 ±1.11
Gross Beta [a]	900.0	pCi/L	2.93 ±2.63	13.58 ±3.20	5.41 ±2.76	3.18 ±2.61
Radon [a]	913.0	pCi/L	203 ±16	411 ±18	145 ±12	112 ±13
Strontium [a]	905.0	pCi/L	-0.125 ±0.190	-0.271 ±0.328	-0.062 ±0.332	-0.071 ±0.254

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
[a] Subcontracted to Truesdail laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

#94595

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWM

SAMPLERS: (Signature)

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (9310)	GROSS BETA (9310)					REMARKS	PRESERVATIVE USED
-1 02NEW1-002	11-4-96	1625		✓	H_2O		4	✓	✓	✓	✓						
-2 02DGMW61-002	11-4-96	1735		✓	H_2O		4	✓	✓	✓	✓						
-3 02DGMW60-002	11-4-96	1505		✓	H_2O		4	✓	✓	✓	✓						
-4 02DGMW59-002	11-4-96	1315		✓	H_2O		4	✓	✓	✓	✓						

CDM FEDERAL

4325

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/5/96 9:00 AM				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
KAREN TAGMAZIAN	11/5/96 9:04 A.M.				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUESDAIL COURIER - 1 COOLER		[signature]	11/5/96 10:00 am	APCL	11/5/96 11:20

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964565
Collected by:
Collected on: 11/13-19/96

Received: 11/19/96
Extracted: N/A
Tested: 11/20/96
Reported: 01/10/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples*

Component Analyzed	Method	Unit	Analysis Result			
			01DGMW58-002 96-04565-1	01MW201-002 96-04565-2	03UGMW26-002 96-04565-3	03UGMW26-302 96-04565-4
Gross Alpha	SM7110C	pCi/L	5.81 ±1.70	0.89 ±1.22	13.3 ±2.27	14.37 ±2.33
Gross Beta	900.0	pCi/L	-1.54 ±2.33	0.86 ±2.46	1.23 ±2.65	2.22 ±2.64

Component Analyzed	Method	Unit	Analysis Result			
			04UGMW63-002 96-04565-5	04UGMW63-302 96-04565-6	05DBMW68 96-04565-7	05DBMW41-002 96-04565-8
Gross Alpha	SM7110C	pCi/L	22.86 ±2.80	21.89 ±2.75	20.40 ±2.66	29.04 ±4.23
Gross Beta	900.0	pCi/L	3.06 ±2.69	2.67 ±2.69	3.75 ±2.75	5.68 ±2.90

Component Analyzed	Method	Unit	Analysis Result			
			05DGMW67-002 96-04565-9	05NEW1-002 96-04565-10	05UGMW27-002 96-04565-11	18MCAS04-702 96-04565-20
Gross Alpha	SM7110C	pCi/L	19.58 ±2.50	10.05 ±2.65	14.67 ±2.20	3.28 ±1.47
Gross Beta	900.0	pCi/L	1.35 ±2.66	3.50 ±2.72	2.21 ±2.64	2.60 ±2.56

Component Analyzed	Method	Unit	Analysis Result			
			03UGMW26-002 96-04565-3	03UGMW26-302 96-04565-4	04UGMW63-002 96-04565-5	04UGMW63-302 96-04565-6
Radon	913.0	pCi/L	530 ±22	558 ±21	724 ±22	798 ±22
Strontium	905.0	pCi/L	-0.131 ±0.194	0.079 ±0.300	0.020 ±0.297	-0.182 ±0.278

Component Analyzed	Method	Unit	Analysis Result			
			05DBMW68 96-04565-7	05DBMW41-002 96-04565-8	05DGMW67-002 96-04565-9	05NEW1-002 96-04565-10
Radon	913.0	pCi/L	571 ±20	325 ±19	270 ±18	441 ±19
Strontium	905.0	pCi/L	-0.194 ±0.263	0.018 ±0.310	-0.108 ±0.269	-0.141 ±0.246

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	Analysis Result			
			05UGMW27-002	09DBMW45	12DBMW48-002	12UGMW31-002
			96-04565-11	96-04565-12	96-04565-13	96-04565-14
Radon	913.0	pCi/L	490 ±21	387 ±18	285 ±18	410 ±20
Strontium	905.0	pCi/L	-0.136 ±0.288	-0.077 ±0.147	-0.026 ±0.252	0.033 ±0.293

Component Analyzed	Method	Unit	Analysis Result			
			13DBMW49-002	13DBMW49-302	13DGMW78-002	14DBMW50-002
			96-04565-15	96-04565-16	96-04565-17	96-04565-18
Radon	913.0	pCi/L	325 ±16	339 ±19	309 ±15	401 ±18
Strontium	905.0	pCi/L	0.023 ±0.172	-0.086 ±0.146	-0.176 ±0.205	-0.021 ±0.167

Component Analyzed	Method	Unit	Analysis Result		
			14DGMW79-002	18MCAS04-702	20DBMW55-002
			96-04565-19	96-04565-20	96-04565-21
Radon	913.0	pCi/L	497 ±17	47 ±11	218 ±15
Strontium	905.0	pCi/L	-0.090 ±0.140	0.179 ±0.161	-0.102 ±0.318

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

* Subcontracted to Truesdail Laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS El Toro GWMA

SAMPLERS: (Signature)

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	Gross Alpha	Gross Beta	Strontium	Radon					REMARKS	PRESERVATIVE USED
1	05DGMW67-002	11/13/96	1005		✓	H_2O	4	1	1	1	1					Fax coc to [illegible]	
2	12DBMW45-002	↓	1410		↓	↓	2			1	1					@ 909 590 1499	
3	05MEW1-002		1155				4	1	1	1	1						
4	05DBMW41-002		1455				4	1	1	1	1						
5	05GMW27-002		1640				4	1	1	1	1						
6	12GMW31-002		1605				2			1	1						

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Scott Schmal	11/14/96 10:40				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Angela Burke	11/14/96 1040				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
Truesdail Courier - 1 cooler		Kathy M. Clapper	11/13/96 11:15am	Truesdail Lab Tustin CA 714 730-6339	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) Brian [illegible]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA/BETA						REMARKS	PRESERVATIVE USED
P.T	05DBMW68	11-15-96	12:35		✓	H_2O		4	1	1	2							

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/15/96 1440				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[illegible]	11/15/96 [illegible]				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUESDAIL COURIER		Karen M Clapper	11/15 1500	TRUESDAIL LAB TUSTIN CA. 714-730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

947 54

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: EL TORO GWM

SAMPLERS: (Signature) Brian [illegible]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (9310)	GROSS BETA (9310)					REMARKS	PRESERVATIVE USED
-1	04UGMW63-002	11-14-96	10:00		✓	H_2O	4	1	1	1	1						
-2	04UGMW63-302	11-14-96	10:05		✓	H_2O	4	1	1	1	1					TRUESDAIL to FAX	
-3	03UGMW26-002	11-14-96	9:20		✓	H_2O	4	1	1	1	1					COC to APCL	
-4	03UGMW26-302	11-14-96	9:35		✓	H_2O	4	1	1	1	1					909-590-1498	
-5	20DBMW55-002	11-14-96	15:10		✓	H_2O	2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Purnell	11/15/96 9:40 AM				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Chris Roberts	11/15/96 9:40 AM				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUESDAIL COURIER COOLERS		[illegible]	11/15 10:15 am	TRUESDAIL LAB TUSTIN CA. 714-730-6239	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [illegible] Brian [illegible]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	STRONTIUM (905)	GROSS ALPHA/BETA (9310)	RADON (913)	REMARKS	PRESERVATIVE USED
-1	18MCAS04-702	11-19-96	12:00		✓	H_2O		1	2	1		
-2	~~18MCAS04~~ - 01MW201-002	11-18-96	1425		✓	H_2O			2			
-3	01DGMW58-002	11-18-96	1305		✓	H_2O			2			
-4	19DBMW45	11-18-96	1615		✓	H_2O		1		1		

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/19/96 1427				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Linda Burke	11/19/96 1427				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUCSDAIL COURIER		Karen M. Clapper	11/19 2:30pm	TRUCSDAIL LAB Tustin CA. (714) [illegible]6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Filer

#94810

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature] [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	ANALYSIS REQUIRED: STRONTIUM	RADON							REMARKS	PRESERVATIVE USED
-1	14DGMW79-002	11/19/96	1250		✓	H_2O		2	1	1								
-2	13DBMW49-002	11/19/96	1550		✓	H_2O		2	1	1								
-3	13DGMW78-002	11/19/96	1450		✓	H_2O		2	1	1								
-4	14DBMW50-002	11/19/96	1345		✓	H_2O		2	1	1								
-5	13DBMW49-302	11/19/96	1555		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/20/96 9 24				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/20/96 9:25				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
Truesdail Courier		Karen M Clapper [signature]	11/20 10:00am	1010 Truesdail Lab (714) 730-6231	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964577
Collected by:
Collected on: 11/20-26/96

Received: 11/21-27/96
Extracted: N/A
Tested: 11/21-12/17/96
Reported: 01/13/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples*

Component Analyzed	Method	Unit	PQL	Analysis Result			
				01DGMW57-002 96-04577-1	01MW101-002 96-04577-2	01MW102-002 96-04577-3	01MW102-702 96-04577-4
Gross Alpha	SM7110C	pCi/L		5.06 ±1.60	2.90 ±1.39	0.97 ±1.18	6.25 ±1.70
Gross Beta	900.0	pCi/L		2.56 ±2.39	11.9 ±2.93	13.7 ±3.76	4.87 ±2.55
Radon	913.0	pCi/L		-	-	-	595 ±126
Chromium (VI)	7196	mg/L	0.01	N.D.	N.D.	0.017	0.014
Strontium	905.0	pCi/L		-	-	-	0.223 ±0.288

Component Analyzed	Method	Unit	PQL	Analysis Result			
				17DGMW82-002 96-04577-7	17NEW1-002 96-04577-8	17NEW2-002 96-04577-9	18MCAS05A-502 96-04577-11
Gross Alpha	SM7110C	pCi/L		9.60 ±1.96	6.03 ±1.56	3.28 ±1.43	0.07 ±1.06
Gross Beta	900.0	pCi/L		5.97 ±2.59	1.67 ±2.34	2.16 ±2.37	-0.54 ±1.74
Radon	913.0	pCi/L		515 ±19	-	-	36 ±11
Chromium (VI)	7196	mg/L	0.01	N.D.	N.D.	N.D.	N.D.
Strontium	905.0	pCi/L		-0.092 ±0.281	-	-	-0.044 ±0.314

Component Analyzed	Method	Unit	PQL	Analysis Result		
				07DGMW72-002 96-04577-5	07DGMW91-002 96-04577-6	18BGMW03E-002 96-04577-10
Radon	913.0	pCi/L		464 ±20	378 ±19	375 ±19
Strontium	905.0	pCi/L		-0.151 ±0.287	-0.114 ±0.290	-0.024 ±0.278

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 19UGMW35-002 96-04577-12	02NEW2-002 96-04577-13	16DBMW52-002 96-04577-14
Gross Alpha	SM7110C	pCi/L		-	28.29 ±2.95	-
Gross Beta	900.0	pCi/L		-	3.40 ±2.31	-
Radon	913.0	pCi/L		342 ±16	702 ±22	279 ±16
Strontium	905.0	pCi/L		0.055 ±0.287	-0.005 ±0.106	-0.040 ±0.151

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

* All analyses were subcontracted to Truesdail Laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)							REMARKS	PRESERVATIVE USED
-1	190GMW35-002	11/21/96	1630		✓	H_2O		2	1	1								
-2	07DGMW91-002	11/21/96	0845		✓	H_2O		2	1	1								
-3	18BGMW03E-002	11/21/96	1520		✓	H_2O		2	1	1								
-4	07DGMW72-002	11/21/96	0935		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/22/96 11:08				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/22/96 11:08				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUISDAIL COURIER		[signature]	11/22/96 1:30pm	TRUISDAIL LAB TUSTIN 714-730-6239	

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CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 62016-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature)

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	NO. OF CONTAINERS	RADON	STRONTIUM	GROSS ALPHA	GROSS BETA	Chrom VI (7196)				REMARKS	PRESERVATIVE USED
-1	01MW101-007	11-20-96	845		✓	H_2O	3			1	1	1				Note short holding	
-2	01MW102-707	11-20-96	1500		✓	H_2O	5	1	1	1	1	1			1	times for Chrom VI	
-3	18MCAS05A-502	11-20-96	1125		✓	H_2O	5	1	1	1	1	1					
-4	01MW102-007	11-20-96	0940		✓	H_2O	3			1	1	1				Fax conf. rec	
-5	17DGMW82-062	11-20-96	1235		✓	H_2O	5	1	1	1	1	1					
-6	17NEW7-062	11-20-96	1032		✓	H_2O	3			1	1	1					
-7	01DGMW57-002	11-20-96	0916		✓	H_2O	3			1	1	1					
-8	17NEW1-002	11-20-96	1143		✓	H_2O	3			1	1	1					

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/21/96 0815				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[illegible]	11/21/96 0815				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUISDAIL COURIER		[illegible]	11/21 0845	TRUISDAIL LAB - IRVINE CA 714-730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

#94910

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	ANALYSIS REQUIRED: STRONTIUM	RADON							REMARKS	PRESERVATIVE USED
16DBMW52-002	11/26/96	11:20		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	11/26/96 9:55				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/26/96 9:55				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUISDAIL Courier		[signature]	11/26 10:30am	TRUISDAIL LAB 730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

#9941

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	STRONTIUM	GROSS ALPHA	GROSS BETA	RADON					REMARKS	PRESERVATIVE USED
02NEW2-002	11/26/96	0841		✓	H2O		4	1	1	1	1					FAX COC TO APCL LAB	

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11/27/96 9:15				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/27/96 9:15				

Airbill No.: TRUISDAIL LAB COURIER

Received for Laboratory by: (Signature) [signature] — Date / Time: 11/27 9:35am

Laboratory: TRUISDAIL LAB, TUSTIN CA, 730-6239

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Brian Trinh
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964651
Collected by:
Collected on: 12/02/96

Received: 12/03/96
Extracted: N/A
Tested: 02/13/97
Reported: 02/18/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				08DBMW73-302 96-04651-1	08DGMW73-002 96-04651-2	09DGMW75-002 96-04651-3	09DGMW75-502 96-04651-4
Radon	913.0	pCi/L		297 ±14	230 ±15	571 ±21	162 ±14
Strontium	905.0	pCi/L		-0.046 ±0.191	-0.026 ±0.170	-0.099 ±0.151	-0.087 ±0.171

Component Analyzed	Method	Unit	PQL	Analysis Result			
				10DGMW77-002 96-04651-5	15DBMW51-002 96-04651-6	19DBMW54-002 96-04651-7	19DGMW85-002 96-04651-8
Radon	913.0	pCi/L		390 ±18	305 ±17	844 ±25	317 ±19
Strontium	905.0	pCi/L		-0.100 ±0.140	0.058 ±0.139	-0.0167 ±0.182	-0.154 ±0.341

Component Analyzed	Method	Unit	PQL	Analysis Result			
				22DBMW47-002 96-04651-9	22DBMW47-502 96-04651-10	24NEW1-002 96-04651-11	24NEW4-002 96-04651-12
Radon	913.0	pCi/L		428 ±16	37 ±10	467 ±18	370 ±19
Strontium	905.0	pCi/L		-0.055 ±0.150	-0.051 ±0.142	-0.059 ±0.166	-0.127 ±0.232

Component Analyzed	Method	Unit	PQL	Analysis Result			
				24NEW5-002 96-04651-13	24NEW6-002 96-04651-14	24NEW7-002 96-04651-15	24NEW8-002 96-04651-16
Radon	913.0	pCi/L		410 ±16	352 ±16	288 ±15	358 ±17
Strontium	905.0	pCi/L		-0.022 ±0.129	-0.033 ±0.142	-0.013 ±0.199	-0.061 ±0.192

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

#94996

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON	STRONTIUM	GROSS ALPHA	GROSS BETA					REMARKS	PRESERVATIVE USED
-1	24NEW6-002	12/2/96	945		✓	H_2O		2	1	1								
-2	22DBMW47-502	12/2/96	1223		✓	H_2O		2	1	1								
-3	24NEW5-002	12/2/96	1120		✓	H_2O		2	1	1								
-4	08DGMW73-002	12/2/96	1615		✓	H_2O		2	1	1								
-5	22DBMW47-002	12/2/96	1325		✓	H_2O		2	1	1								
-6	24NEW1-002	12/2/96	1440		✓	H_2O		2	1	1								
-7	08DGMW73-302	12/2/96	1635		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	12/3/96 10:15				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12/3/96 10:15				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUISDAIL COURIER	1 cooler	[signature]	12/03 10.30	TRUISDAIL LAB TUSTIN CA. 714-730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

#95045

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature)

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)							REMARKS	PRESERVATIVE USED
-1	10DGMW77-002	12/4/96	1140		✓	H_2O	-	2	1	1							FAX COC TO	
-2	09DGMW75-002	12/4/96	1350		✓	H_2O		2	1	1							APCL LAB	
-3	15DBMW51-002	12/4/96	1500		✓	H_2O		2	1	1								
	~~09DGMW75-002~~	~~12/4/96~~																
-4	09DGMW75-502	12/4/96	1245		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	12/5 11:10				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[illegible]	12/5/96 11:10				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
		[illegible]	12/5 12:00pm	TRUISDAIL LAB TUSTIN CA. 714 730-6239	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

#95088

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: 6206-009

SAMPLERS: (Signature) [signature]

	SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	Strontium (905)	Radon (913)								REMARKS	PRESERVATIVE USED
-1	24NEW7-002	12/3/96	1425		✓	H_2O		2	1	1									
-2	19DBNW54-002	12/3/96	1150		✓	H_2O		2	1	1									
-3	24NEW4-002	12/3/96	1615		✓	H_2O		2	1	1									
-4	24NEW8-002	12/3/96	1305		✓	H_2O		2	1	1									
-5	19DGMW85-002	12/3/96	1040		✓	H_2O		2	1	1									

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	12/4/96				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	12/4/96 12:11				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUISDAIL Courier		[signature]	12/4 1:00pm	TRUISDAIL LAB TUSTIN 714 730-2639	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Scott Schroeder
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-964751
Collected by: Ben/Scott
Collected on: 11/12-13/96

Received: 11/13/96
Extracted: N/A
Tested: 11/13-12/09/96
Reported: 01/07/97

Sample Description: Water from El Toro - GWM
Project Description: 6206-009 El Toro - GWM

Analysis of Water Samples

Component Analyzed	Method	Unit	Analysis Result 02NEW11-002 96-04751-1	03DBMW39-002 96-04751-2	03DGM64-002 96-04751-3
Gross Alpha [a]	SM7110C	pCi/L	6.92 ±1.68	15.34 ±2.29	13.33 ±2.16
Gross Beta [a]	900.0	pCi/L	1.39 ±2.46	5.41 ±2.70	7.29 ±2.87
Radon [a]	913.0	pCi/L	324 ±18	760 ±22	602 ±21
Strontium [a]	905.0	pCi/L	-0.120 ±0.187	-0.069 ±0.239	0.033 ±0.208

Component Analyzed	Method	Unit	Analysis Result 03DGMW64-302 96-04751-4	03DGMW64-702 96-04751-5	08DGMW74-002 96-04751-6
Gross Alpha [a]	SM7110C	pCi/L	13.33 ±2.16	4.54 ±1.47	-
Gross Beta [a]	900.0	pCi/L	7.27 ±2.84	5.11 ±2.66	-
Radon [a]	913.0	pCi/L	826 ±22	47 ±12	318 ±16
Strontium [a]	905.0	pCi/L	-0.154 ±0.216	0.014 ±0.300	-0.022 ±0.230

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
[a] Subcontracted to Truesdail Laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: EL TORO GWM

SAMPLERS: (Signature) [illegible], Scott [illegible]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (930)	GROSS BETA (930)					REMARKS	PRESERVATIVE USED
03DGMW64-302	11-12-96	1530		✓	H_2O		4	1	1	1	1						
03DGM64-002	11-12-96	1500		✓	H_2O		4	1	1	1	1						
03DGMW64-702	11-13-96	0900		✓	H_2O		4	1	1	1	1					TRUESDAIL TO FAX	
02NEW11-002	11-12-96	1430		✓	H_2O		4	1	1	1	1					TOC to APCL	
03DBMW39-002	11-12-96	1715		✓	H_2O		4	1	1	1	1					LAB	
08DGMW74-002	11-13-96	0950		✓	H_2O		2	1	1								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
Pat Russell	11-13-96 1300				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
Angela Burke	11-13-96 1305				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUSDAIL Courier / 1 cooler		Bacon M Clapper	11/13 1315	TRUESDAIL LAB - IRVINE CA. 714-730-6239	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
CDM Federal Programs Corp.
Attention: Brian Trinh
3760 Convoy St., Ste 210
San Diego CA 92111
Tel: (619)268-3383 Fax: (619)268-9677

Service ID #: 801-971119
Collected by:
Collected on: 11/12/96-01/08/97

Received: 01/09/97
Extracted: N/A
Tested: 01/06-02/01/97
Reported: 02/18/97

Sample Description: Water
Project Description: 6206-009 MCAS El Toro GWM

Analysis of Water Samples*

Component Analyzed	Method	Unit	PQL	Analysis Result 02NEW7-002 97-01119-1	02UGMW25-002 97-01119-2	03DGMW65X-002 97-01119-3
Gross Alpha	SM7110C	pCi/L		14.82 ±2.21	10.35 ±1.95	14.00 ±2.20
Gross Beta	900.0	pCi/L		0.38 ±2.09	-0.68 ±2.37	2.19 ±2.57
Radon	913.0	pCi/L		355 ±16	416 ±16	639 ±21
Strontium	905.0	pCi/L		0.048 ±0.251	-0.039 ±0.222	-0.038 ±0.198

Component Analyzed	Method	Unit	PQL	Analysis Result 04DBMW40-002 97-01119-4	04DGMW66-002 97-01119-5	16DGMW81-002 97-01119-6
Gross Alpha	SM7110C	pCi/L		25.98 ±2.88	7.45 ±1.73	-
Gross Beta	900.0	pCi/L		6.55 ±2.81	1.36 ±2.49	-
Radon	913.0	pCi/L		836 ±21	551 ±18	312 ±14
Strontium	905.0	pCi/L		-0.201 ±0.197	-0.073 ±0.198	0.001 ±0.237

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
* Subcontracted to Truesdail Laboratories, Inc.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO GWM

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (9310)	GROSS BETA (9310)					REMARKS	PRESERVATIVE USED
03DGMW65X-002	11-11-96	1610		✓	H_2O		4	1	1	1	1					Fax COC to APCL	
02UGMW 25-002	11-12-96	1135		✓	H_2O		4	1	1	1	1					@ 909.590.1498	
04 DBMW48-002	11-12-96	1200		✓	H_2O		4	1	1	1	1						
04DGMW66-002	11-12-96	0950		✓	H_2O		4	1	1	1	1						

Trump Wetch

CDM Federal

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	11/12/96 1440				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
[signature]	11/12/96 1440				

Airbill No.	Received for Laboratory by: (Signature)	Date / Time	Laboratory
TRUEDAIL LAB COURIER	[signature]	11/12 3:15	Truedail Lab 714.730.6239

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

CDM FEDERAL PROGRAMS CORPORATION

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6206-009

PROJECT NAME: MCAS EL TORO - GWMP

SAMPLERS: (Signature) [signature]

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	MATRIX		NO. OF CONTAINERS	RADON (913)	STRONTIUM (905)	GROSS ALPHA (9310)	GROSS BETA (9310)					REMARKS	PRESERVATIVE USED
02NEW7-002	1-6-97	1300		X	H_2O		4	✓	✓	✓	✓						
16DGMW81-002	1-6-97	950		X	H_2O		2	✓	✓								

Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time
[signature]	1/9/97 0730				
Received by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Date / Time**	**Received by: (Signature)**	**Date / Time**
K. Tochmarice	1/9/97 9:04				
Airbill No.		**Received for Laboratory by: (Signature)**	**Date / Time**	**Laboratory**	
TRUESDAIL - COURIER 1-COOLER				TRUESDAIL LABS	

Distribution: Original Accompanies Shipments; Copy to Coordinator Field Files

APPENDIX F

WELL PURGING AND SAMPLING LOGS

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: OIDGMW57 | SAMPLE NO.: OIDGMW57-002

START (Date): 11/20/96 (Time): 0900 | END (Date): 11/20/96 (Time): 0920

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, calm, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 51.50 | FINAL DTW: 51.96

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ WELL TO Tubing radius	~~ORIGINAL~~ ~~DTW~~ Pump depth	~~CASING~~ VOLUME	~~1" - 0.66~~ 5" - 0.93 6" - 1.50

0.03125² x 81 x 3.14 = 0.25 x 7.48 ~~Gal. Csg Vol.~~ x 3 Csg. Vol. = 5.75 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0901	1	0.5	21.28	7.26	1.00	14.7	8.7	+449.4	N	
0902	2	1	21.30	7.23	0.99	7.7	7.7	-452.5	N	
0903	3	1.5	21.40	7.23	0.97	3.7	5.0	-457.1	N	
0904	4	2	21.46	7.22	0.96	3.4	4.6	-457.4	N	
0905	5	2.5	21.52	7.22	0.97	3.6	4.5	-458.1	N	
0906	6	3	21.56	7.22	0.97	4.1	4.3	-458.6	N	
0908	8	4	22.26	7.19	0.98	0.8	3.5	-444.2	N	
0909	9	4.5	22.42	7.19	0.98	0.7	3.5	-457.5	N	
0910	10	5	22.48	7.19	0.98	0.6	3.4	-456.7	N	
0911	11	5.5	22.55	7.19	0.98	0.5	3.3	-457.4	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low Flow purge, 3/4" tubing

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01DGMW58 | SAMPLE NO.: 01DGMW58-002

START (Date): 11/18/96 (Time): 251 | END (Date): 11/18/96 (Time): 1310

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~69°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC unstick

OVM READING: 0 | ORIG. DTW: 42.78 | FINAL DTW: 42.84

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66
			5" - 0.93
			6" - 1.50

82 - 42.78 = 39.22 x 25.9 Gal./Csg Vol. x 3 Csg. Vol. = 78 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 10 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 80'
1254	3	30	21.18	7.20	0.870	3.9	98.7	38.4	
1255	4	40	21.16	7.20	0.866	9.0	98.9	38.8	
1256	5	50	21.14	7.20	0.861	1.1	99.0	40.1	
1257	6	60	21.13	7.20	0.857	4.1	98.8	41.0	
1258	7	70	21.12	7.19	0.852	5.5	98.5	43.9	
1259	8	80	21.13	7.19	0.852	0.0	98.3	45.0	
1300	9	90	21.12	7.19	0.851	0.4	98.1	46.7	
1301	10	100	21.10	7.19	0.843	1.0	97.4	50.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32.133 Purge rate: 10 gpm 0.78 min interv

Final meter reading: 10,332

Number of container: 8 bottles collected at 1305

Well box has no lock need ~5" [illegible]

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01MW101 | SAMPLE NO.: 01MW101-002

START (Date): 11/20/96 (Time): 0837 | END (Date): 11/20/96 (Time): 0848

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 69°F

FIELD PERSONNEL'S NAME(S): Brian Tosh (CDM), Philip Lickey (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 100.60 | FINAL DTW: 138.04

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

153 - 100.60 = 52.4 x 34.6 Gal./Csg Vol. x 3 Csg. Vol. = 104 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 147'
0840	3	24	21.97	8.30	0.812	5.7	84.6	2.8	
0841	4	32	22.02	8.37	0.770	5.8	84.6	4.5	
0842	5	40	22.02	8.50	0.753	1.9	84.1	6.4	
0843	6	48	21.97	8.57	0.747	3.7	83.8	10.6	Flow rate dropped to < 0.5 gpm
									Samples taken at 0845

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 33,930 Purge rate: 8 gpm 1 min interval

Final meter reading: 33,986

Number of container: 8 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01MW101 | SAMPLE NO.: 01MW101-002

START (Date): 11/18/96 (Time): ~~1006~~ FT 11/19 1017 | END (Date): 11/18/96 (Time):

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny 75°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 64.71 | FINAL DTW: 129.82

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

153 - 64.71 = 88.29 x 58.3 Gal./Csg Vol. x 3 Csg. Vol. = 175 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at ~~90'~~ BT 11/19 140'
1019	2	16.5	22.89	8.52	0.746	235.6	44.2	25.3	
1021	4	33.0	23.02	8.52	0.746	7.9	39.1	24.2	
1023	6	49.5	23.29	8.47	0.752	9.1	32.8	23.7	Purge rate dropped to 0.66 gpm
1025	8	66.0	23.44	8.37	0.760	25.5	28.5	24.9	
1028	11	90.75	23.70	8.32	0.763	74.8	24.3	23.1	
1030	13	107.25	23.83	8.33	0.764	111.3	23.5	22.9	
1032	15	123.75	24.05	8.31	0.766	128.5	22.3	23.3	
1034	17	140.25	24.24	8.27	0.769	149.4	25.4	24.7	
1036	19	156.75	24.37	8.23	0.768	129.1	27.2	26.3	
1039	22	181.5							

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32,044 Purge rate: 8.25 gpm 2.1 min interval

Final meter reading: 32,093

Number of container: 8 bottles collected

Lock is cut.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01 MW 102 | SAMPLE NO.: 01 MW 102 - 002

START (Date): 11/20/96 (Time): 0927 | END (Date): 11/20/96 (Time): 0943

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny 69°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip Mckay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 110.50 | FINAL DTW: 121.05

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50				
140	- 110.50	= 29.5	x 19.5	Gal./Csg Vol.	x 3 Csg. Vol.	= 58.4	Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 135'
0928	1		26.91	7.19	1.255	2.6	59.1	32.7	
0929	2		24.00	7.17	1.230	3.6	52.4	8.3	
0930	3		22.37	7.17	1.204	4.8	47.4	-0.9	
0931	4		22.06	7.19	1.199	5.1	44.5	2.3	
0932	5		22.02	7.19	1.196	4.1	43.7	3.0	
0933	6		21.91	7.21	1.180	2.3	45.5	0.5	
0934	7		21.87	7.22	1.159	1.7	46.4	-3.5	
0935	8		21.86	7.21	1.159	1.4	48.0	-5.7	Purge rate dropped to < 0.5 gpm
									Sample taken at 0940

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 33.986 Purge rate: gpm 1 min interval

Final meter reading: 34.010

Number of container: 8 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01MW102 | SAMPLE NO.: 01MW102-002

START (Date): 11/19/96 (Time): 1147 | END (Date): 11/19/96 (Time): 1205

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny 71°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 107.97 | FINAL DTW: 126.92

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

140 - 107.97 = 32.03 x 2.1 Gal./Csg Vol. x 3 Csg. Vol. = 63.4 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.s.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 137'
1148	1	8	22.90	7.02	1.411	178.2	60.6	70.1	
1149	2	16	22.51	7.05	1.418	159.9	58.9	65.0	
1150	3	24	22.47	7.03	1.426	153.5	57.1	62.2	well went dry
1154	6	30	22.21	7.05	1.405	188.4	43.7	12.6	Purge rate dropped to < 3gpm
									Continue to drop to < 0.5gpm

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32.110 Purge rate: 8 gpm 0.8 min interval

Final meter reading: 32.132

Number of container: 8 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 01MW201 | SAMPLE NO.: 01MW201 - 002

START (Date): 11/13/96 (Time): 1356 | END (Date): 11/13/96 (Time): 1435

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny 72°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vented

OVM READING: 0 | ORIG. DTW: 40.44 | FINAL DTW: 54.62

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
62	-	40.44	=	21.56	x	1.42	Gal./Csg Vol.	x	3 Csg. Vol.	= 43 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 60'
1358	2	6	22.62	7.35	0.937	120.9	85.6	-29.7	
1400	4	12	22.58	7.36	0.938	236.0	82.5	-29.4	
1401	5	15	22.61	7.37	0.942	239.1	79.6	-37.3	
1402	6	18	22.86	7.35	0.942	289.0	77.8	-52.0	
1403	7	21	22.93	7.31	0.948	192.3	70.7	-56.1	Purge rate dropped to 0.5gpm
1408	12	36	23.37	7.17	0.994	83.9	69.6	-51.8	
1411	15	37.5	23.48	7.17	0.998	97.8	68.9	-49.6	
1415	19	39.5	23.73	7.13	1.005	333.3	67.6	-43.3	
1418	22	41.0	23.97	7.13	1.008	61.4	66.9	-34.2	
1422	26	43.0	24.15	7.13	1.008	47.8	66.9	-27.3	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32332 Purge rate: 3.0 gpm 1.5 min interval

Final meter reading: 32362 0.5 gpm 9 min

Number of container: 8 bottles collected

Need new log (see back to view week for)

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO: 02-DGMW-59 | SAMPLE NO: 02-DGMW-59-002

START Date: 11/4/96 Time: 1244 | END Date: 11/4/96 Time: 1320

WELL CASING DIAMETER: 2" ( ) 4" (X) 6" ( )

WEATHER: hazy, lt. breeze, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 53.30 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~	~~DTW~~	VOLUME	5" - 0.93
Tubing ~~diam radius~~	Pump depth		6" - 1.50

0.03125 ^{2} x 85 x3.14 = 0.2606 x 7.48 ~~Gal. Csg. Vol.~~ gal/ft +0.06 x 3 Csg. Vol = 6.03 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.25 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal)	TEMP ~~°F~~ °C	pH (s.u.)	COND. (umhos/cm)	TURB. (NTU)	DISSOLVED OXYGEN ~~mg/l~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1247	3	1	19.90	7.21	1.46	16.8	0.0	127.1	Y	
1250	6	2	19.84	7.14	1.48	0.0	0.0	113.0	Y	
1253	9	3	20.14	7.14	1.49	0.0	0.0	110.5	Y	
1300	16	4	20.48	7.14	1.50	0.5	0.0	98.6	Y	
1306	22	5	20.92	7.14	1.51	0.5	0.0	94.2	Y	
1310	26	6	20.90	7.14	1.50	0.1	0.0	72.8	Y	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides (X) Herbicides (X)
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge pipe

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

L NO.: 0206MW59 | SAMPLE NO.: 0206MW59-002R

START (Date): 11/27/96 (Time): 1230 | END (Date): 11/27/96 (Time): 1250

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, mod NW breeze, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 51.44 | FINAL DTW: 51.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED	ORIGINAL	CASING	
~~WELL TD~~ Tubing tailpipe	~~DTW~~ Pump depth	VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

0.03125² x 85 x3.14 = 0.26 x 7.48 gal/ft +0.06 ~~Gal./Csg Vol.~~ x 3 Csg. Vol. = 6.03 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1232	2	1	18.75	6.64	1.70	0.8	26.4	87.6	N	
1234	4	2	18.80	6.92	1.70	1.1	23.9	85.9	N	
1236	6	3	19.50	7.17	1.72	4.3	11.0	79.7	N	
1238	8	4	19.91	7.22	1.74	1.1	5.1	75.5	N	
1240	10	5	19.82	7.23	1.73	0.9	4.1	74.6	N	
1242	12	6	19.74	7.23	1.73	0.9	2.9	72.7	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals (X) Cr III

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Resample. Original holding time missed

Low Flow purge 3/4" tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO: 02DGMW60 | SAMPLE NO: 02DGMW60-002

START Date: 11/4/96 Time: 1428 | END Date: 11/4/96 Time: 1505

WELL CASING DIAMETER: 2" ( ) 4" (X) 6" ( ) | WEATHER: Hazy, lt. breeze, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 65.30 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~	~~DTW~~	VOLUME	5" - 0.93
Tubing radius	Pump depth		6" - 1.50

0.03125² X 98 x3.14 = 0.301 x 7.48 ~~Gal. Csg Vol.~~ +0.06 x 3 Csg. Vol. = 6.92 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.25 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP ~~°F~~ °C	pH (s.u.)	COND. (umhos/cm)	TURB. (NTU)	DISSOLVED OXYGEN ~~%~~ (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1430	2	0.5	22.21	6.78	1.60	126	37.3	87.3	N	
1436	8	2	22.86	6.88	1.61	0.9	19.6	76.4	N	
1440	12	3	23.23	6.89	1.63	0.8	12.8	71.8	N	
1444	16	4	23.41	6.89	1.63	0.5	8.9	73.9	N	
1448	20	5	23.52	6.89	1.63	0.4	6.9	71.7	N	
1452	24	6	23.56	6.90	1.63	0.6	4.1	69.2	N	
1456	28	7	23.71	6.90	1.63	0.4	3.5	68.8	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides (X) Herbicides (X)
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge pipe

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO. 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO. 02DGMW61 | SAMPLE NO. 02DGMW61-002

START (Date) 11/4/96 Time 1700 | END (Date) 11/4/96 Time 1740

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Hazy, calm, 65°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 44.09 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TO~~ ~~DTW~~ VOLUME 5" - 0.93

Tubing radius Pump depth 6" - 1.50

0.03125^2 X 98 ×3.14 = 0.301 x 7.48 ~~gal/ft~~ to 0.06 ~~Gal. Csg Vol~~ x 3 Csg. Vol. = 6.92 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP ~~°F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. NTU	DISSOLVED OXYGEN ~~mg/l~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1704	4	1	21.60	6.53	1.06	9.6	79.4	48.7	Y	
1708	8	2	21.65	6.84	1.05	0.4	41.5	49.8	N	
1712	12	3	22.09	7.09	1.06	2.1	31.6	66.5	N	
1716	16	4	22.25	7.09	1.06	0.0	31.4	69.3	N	
1720	20	5	22.43	7.09	1.06	0.0	32.6	72.7	N	
1724	24	6	22.56	7.09	1.06	0.0	33.5	75.6	N	
1728	28	7	22.78	7.09	1.06	0.0	34.9	75.1	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" diam. discharge tube

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump

PURGING LOG

WELL NO.: 02UGMW25 | SAMPLE NO.: 02UGMW25-002

START (Date): 11/12/96 (Time): 1117 | END (Date): 11/12/96 (Time): 1140

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, calm, 80 °F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: ——— | ORIG. DTW: 36.68' | FINAL DTW: 36.68

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~ Tubing radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125² x 72 (x3.14) = 0.2207671 x 7.48 Gal./Csg. Vol. (+0.06 gal/ft.) x 3 Csg. Vol. = 5.134 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~°F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~mg/l~~	REDOX (mV)	COMMENT
1120	3	1.5	18.87	6.96	1.93	9.9	33.4	70.3	
1122	5	2.5	19.03	6.98	1.91	0.8	34.2	54.0	
1123	6	3	19.10	6.98	1.99	1.7	34.1	53.0	
1125	8	4	19.18	6.98	1.97	12.6	34.0	53.0	
1127	10	5	19.42	6.94	1.91	0.8	33.0	57.5	
1128	11	5.5	19.44	6.95	1.93	0.6	33.1	58.3	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low Flow Purge. 3/4" discharge tube

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO: 02NEW1 | SAMPLE NO: 02NEW1-002

START Date: 11/4/96 Time: 1546 | END Date: 11/4/96 Time: 1635

WELL CASING DIAMETER: 2" ( ) 4" (X) 6" ( ) | WEATHER: Hazy, 14 breeze, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 68.62 | FINAL DTW: 69.10

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TO~~ Tubing radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125^2 X 115 x3.14 = 0.353 x 7.48 ~~gal./Csg Vol.~~ 0.06 x 3 Csg. Vol. = 8.09 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.25 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP ~~(°F)~~ °C	pH (s.u.)	COND. (umhos/cm)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1550	4	1	21.93	7.51	0.72	32.1	52.4	-43.1	N	
1554	8	2	22.63	7.55	0.732	7.5	33.7	-78.3	N	
1558	12	3	22.78	7.56	0.73	6.4	27.4	-94.6	N	
1602	16	4	23.10	7.56	0.74	4.2	21.0	-98.1	N	
1606	20	5	23.43	7.56	0.74	5.1	11.9	-114.6	N	
1610	24	6	23.54	7.57	0.74	5.2	8.7	-115.8	N	
1614	28	7	23.63	7.57	0.74	5.2	6.2	-116.4	N	
1618	32	8	23.65	7.57	0.74	5.2	5.3	-116.5	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides (X) Herbicides (X)
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge tube

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

L NO.: 02NEW1 | SAMPLE NO.: 02NEW1-002R

START (Date): 11/27/96 (Time): 1155 | END (Date): 11/27/96 (Time): 1220

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, cool NW breeze, 75F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 63.86 | FINAL DTW: 64.38

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~WELL TO~~ Tubing ~~ORIGINAL~~ ~~DTW~~ Pump depth ~~CASING~~ VOLUME

4" - 0.66
5" - 0.93
6" - 1.50

0.03125² x 115.x3.14 = 0.35 x 7.48 ~~Gal./Csg. Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 8.1 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1159	4	2	22.10	7.70	0.88	62.9	2.8	86.5	N	
1203	8	4	22.55	7.67	0.89	1.7	0.9	77.6	N	
1205	10	5	22.60	7.66	0.89	3.8	0.9	76.9	N	
1207	12	6	22.90	7.66	0.90	3.0	0.7	72.3	N	
1209	14	7	22.84	7.65	0.90	2.4	0.4	67.2	N	
1211	16	8	22.97	7.65	0.90	2.0	0.2	63.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals (X) Cr VI
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Resample. Original holding time missed.

Low flow purge. 3/4" tubing

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (X) Dedicated Pump ( )

PURGING LOG

WELL NO.: 02/EW2 | SAMPLE NO.: 02NEW2-002

START (Date): 11/26/96 (Time): 0822 | END (Date): 11/26/96 (Time): 0845

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, calm, 65°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 66.88 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~ ~~WELL TO~~ Tubing bottom	~~ORIGINAL~~ ~~DTW~~ Pump depth	~~CASING~~ VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50
0.03125² X	95 x3.14 =	0.29 x	7.48 Gal./Csg Vol. x 3 Csg. Vol. = 6.7 Gal.

10.06

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0824	2	1	21.39	6.56	1.39	15.6	72.6	157.9	N	
0826	4	2	21.18	6.83	1.37	9.4	71.8	140.8	N	
0828	6	3	21.78	7.01	1.38	6.7	71.8	130.9	N	
0830	8	4	22.23	7.22	1.39	4.4	71.8	118.8	N	
0832	10	5	22.46	7.23	1.40	4.7	71.9	107.2	N	
0834	12	6	22.67	7.23	1.41	4.9	71.9	98.2	N	
0836	14	7	22.71	7.23	1.40	4.7	71.5	95.6	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" tubing

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: OU1EW3 | SAMPLE NO.: OU1EW3-002

START (Date): 11/7/96 (Time): 1351 | END (Date): 11/7/96 (Time): 1425

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, calm, 90°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 189.46 | FINAL DTW: 189.42

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~ Tubing radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03185² x 224 x3.14 = 0.687 x 7.48 ~~Gal./Csg Vol.~~ gal/ft to.06 x 3 Csg. Vol. = 15.6 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: / gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1353	2	2	20.65	6.92	1.40	104.7	70.2	-23.0	
1355	4	4	20.82	6.92	1.41	50.8	56.6	13.8	
1358	7	7	21.36	6.90	1.41	190.3	53.5	28.2	
1400	9	9	22.15	6.89	1.43	157.3	44.0	32.2	
1402	11	11	22.18	6.89	1.41	159.3	49.5	33.0	
1405	14	14	22.25	6.89	1.43	172.7	43.3	36.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge, 3/4" discharge tube

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 02NEW06 | SAMPLE NO.: 02NEW06-002

START (Date): 11/7/96 (Time): 1103 | END (Date): 11/7/96 (Time): 1130

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, calm, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 189.55 | FINAL DTW: 189.55

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~WELL TD~~ Tubing Radius ~~ORIGINAL~~ ~~DTW~~ Depth to pump ~~CASING~~ VOLUME 4" - 0.66 5" - 0.93 6" - 1.50

0.0375² x 224 x3.14 = ~~0.1235~~ 0.6869 x 7.48 +0.06 Gal./Csg Vol. x 3 Csg. Vol. = 15.6 Gal.

11/7/96

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 1 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
1106	3	3	21.13	5.52	1.30	13.9	49.1	28.1	
1108	5	5	21.85	6.77	1.35	29.0	52.6	1.0	
1110	7	7	22.25	6.94	1.36	30.1	54.8	-8.3	
1112	~~129~~	~~129~~	22.24	6.98	1.38	30.3	56.2	-4.2	
1114	11	11	22.21	7.00	1.34	25.3	57.5	2.6	
1116	13	13	22.22	7.01	1.32	21.5	57.6	7.1	
1118	15	15	22.24	7.03	1.32	15.1	57.2	11.1	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge, Discharge tubing = 3/4"

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 02NEW7 | SAMPLE NO.: 02NEW7-002

START (Date): 1/8/97 (Time): 1221 | END (Date): 1/8/97 (Time): 1300

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear

FIELD PERSONNEL'S NAME(S): Mike Oliphant

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: — | ORIG. DTW: 119.60 | FINAL DTW: 119.60

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED WELL TD~~ ~~ORIGINAL DTW~~ ~~CASING VOLUME~~ ~~4" - 0.66~~ ~~5" - 0.93~~ ~~6" - 1.50~~ low flow Purging see calcs below

~~148 - 119.60 = ____ x ____ Gal./Csg Vol. x 3 Csg. Vol. = ____ Gal.~~

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ oC	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1221	3 min	1½	21.62	7.05	0.965	1.6	62.8	105.5		Clear, no odor
1224	3	3	21.70	7.05	0.967	1.3	62.7	105.1		
1227	3	4½	21.82	7.04	0.968	1.1	62.5	104.2		
1230	3	6	21.96	7.05	0.970	1.0	62.7	102.8		
1233	3	7½	22.05	7.05	0.971	0.9	63.1	102.8		
1236	3	9	21.99	7.05	0.968	1.0	63.3	101.8		
1239	3	10½	22.03	7.05	0.970	0.9	63.3	101.4		
1242	3	12	22.10	7.05	0.970	0.8	63.7	101.4		
1245	3	13½	22.07	7.05	0.971	0.8	63.8	101.4		
1248	3	15	22.07	7.05	0.968	—	64.0	101.4		
1251	3	16½	22.10	7.05	0.970	—	64.2	101.0		
1254	3	18	22.11	7.05	0.970	0.7	64.3	101.1		
1257	3	19½								

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump (X)

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Purge volume calc

$(3.14) \times (132) \times (0.042)^2 \times 7.48 + 0.06 \times 3 \approx 16$ gallons for 3 tubing volumes

~~002 (5.46~~ mo 1/8 ~~5.64~~ mo 1/8

Last 3 readings within acceptable parameters.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 02NEW8A | SAMPLE NO.: 02NEW8A-002

START (Date): 11/7/96 (Time): 1521 | END (Date): 11/7/96 (Time): ~~1535~~ 1540

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, lt. breeze, 85°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 47.48 | FINAL DTW: 47.48

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL~~ TD	~~DTW~~	VOLUME	5" - 0.93
Tubing radius	Impl depth		6" - 1.50

0.03125² x 84 x3.14 = 0.256 x 7.48 ~~Gal./Csg. Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 5.96 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT
1524	3	1.5	22.81	7.09	1.00	53.7	45.2	65.5	
1527	6	3	22.93	7.07	1.00	4.5	46.1	66.6	
1529	8	4	23.07	7.07	1.01	2.1	46.1	66.2	
1532	11	6	23.09	7.07	1.02	3.5	47.6	66.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Discharge pipe = 3/4" diam.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump

PURGING LOG

WELL NO.: 02NEW11 | SAMPLE NO.: 02NEW11-002

START (Date): 11/12/96 (Time): 1410 | END (Date): (Time): 1435

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, lt. W. breeze, 85°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 27.88 | FINAL DTW: 27.88

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TO~~ Turbine radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125² X 66 x3.14 = 0.202 x 7.48 ~~Gal./Csg. Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 4.72 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1412	2	1	21.61	6.94	1.23	178.1	66.2	40.0	
1414	4	2	21.57	6.95	1.18	99.1	72.6	46.1	
1416	6	3	22.02	6.98	1.13	50.6	85.9	65.3	
1418	8	4	22.06	6.98	1.13	55.8	86.6	66.7	
1419	9	4.5	22.08	6.98	1.13	50.3	87.0	68.3	
1420	10	5	22.26	6.98	1.12	43.0	87.4	72.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge tube

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 02NEW11 | SAMPLE NO.: 02NEW11-002R

START (Date): 11/27/96 (Time): 1122 | END (Date): 11/27/96 (Time): 1140

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, mod NW breeze, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 27.99 | FINAL DTW: 27.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED WELL TD~~ Tubing readings	~~ORIGINAL DTW~~ Pump depth	~~CASING~~ VOLUME	4" - 0.65
			5" - 0.93
			6" - 1.50

0.03125² x 66 x3.14 = 0.20 x 7.48 gal/ft to.06 ~~Gal./Csg. Vol.~~ x 3 Csg. Vol. = 4.72 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0 - 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.s.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1124	2	1	20.98	7.40	1.33	155.4	72.9	121.8	N	
1126	4	2	21.01	7.40	1.32	87.3	79.3	121.1	N	
1128	6	3	21.22	7.40	1.31	28.8	80.2	121.0	N	
1130	8	4	21.31	7.40	1.31	29.1	87.0	120.7	N	
1132	10	5	21.69	7.38	1.28	29.5	88.6	120.9	N	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals (X) CrVI

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Resample. Original holding time missed.

Low flow purge. 3/4" tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump

PURGING LOG

WELL NO.: 02NEW12 | SAMPLE NO.: 02NEW12-002

START (Date): 11/7/96 (Time): 1624 | END (Date): 11/7/96 (Time): 1655

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, calm, 80°F

FIELD PERSONNEL'S NAME(S): S. Martin

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 213.42 | FINAL DTW: 213.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TD~~ ~~DTW~~ VOLUME 5" - 0.93

Tubing radius Pump depth 6" - 1.50

0.03125² x 248 x3.14 = 0.760 x 7.48 ~~Gal./Csg Vol.~~ +0.06 x 3 Csg. Vol. = 17.06 24 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 1.0 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.s.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
1626	2	2	22.60	7.27	1.09	128.4	19.6	75.1	
1628	4	4	23.68	7.37	0.93	88.0	16.1	65.6	
1630	6	6	23.97	7.35	0.96	85.6	13.9	60.7	
1634	10	10	24.91	7.28	1.02	59.6	19.3	49.1	
1636	12	12	25.08	7.26	1.05	59.6	22.1	45.9	
1639	15	15	25.56	7.25	1.08	62.0	30.7	37.5	
1642	18	18	25.30	7.23	1.10	67.5	35.2	35.7	
1644	20	20	25.39	7.23	1.12	52.4	37.9	34.1	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 02NEW13 | SAMPLE NO.: 02NEW13-002

START (Date): 12/5/96 (Time): 0838 | END (Date): 12/5/96 (Time): 0900

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~65F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 61.16 | FINAL DTW: 83.02

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66
			5" - 0.93
			6" - 1.50

105 - 61.16 = 43.34 x 28.9 Gal./Csg Vol. x 3 Csg. Vol. = 87 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 85'
0839	1	8.5	19.91	7.27	1.695	-513.1	50.5	148.8	
0840	2	17	20.47	7.29	1.732	86.9	36.0	143.5	
0841	3	25.5	20.59	7.30	1.733	80.4	26.5	133.1	Purge rate dropped to 3 gpm
0844	6	34.5	20.69	7.23	1.801	293.8	19.9	118.4	
0847	9	43.5	21.56	7.17	2.016	113.4	16.1	124.0	
0850	12	52.5	22.05	7.25	2.045	23.2	15.4	122.5	
0853	15	61.5	22.05	7.29	2.007	37.0	21.8	125.2	
0856	18	70.5	22.10	7.28	1.997	12.1	27.7	129.1	
0859	21	79.5	22.24	7.27	2.000	9.4	33.0	132.7	
0902	24	88.5	22.28	7.26	2.014	7.9	36.8	134.6	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Initial meter reading - 38.844 Purge rate - 8.5 gpm 10 min interval

Final meter reading - 38.927 3 gpm 30 min interval

Number of container - 2 bottles

Need 4" cap No lock on well box

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 02NEW14 | SAMPLE NO.: C2NEW14-002

START (Date): 12/5/96 (Time): 0933 | END (Date): 12/5/96 (Time): 0956

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~68°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 46.77 | FINAL DTW: 47.74

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

110 - 46.77 = 63.23 x 41.7 Gal./Csg Vol. x 3 Csg. Vol. = 125 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 85'
0940	2	18	22.09	7.30	1.285	231.5	65.5	143.0	
0941	3	27	22.12	7.29	1.279	507.8	62.7	142.8	
0943	5	45	22.06	7.29	1.279	413.0	62.0	140.6	
0944	6	54	22.05	7.29	1.279	268.8	61.8	139.6	
0945	7	63	22.07	7.29	1.278	167.8	61.4	138.4	
0947	9	81	22.14	7.28	1.275	50.9	60.4	138.3	
0949	11	99	22.23	7.27	1.276	65.6	59.0	139.4	
0950	12	108	22.30	7.27	1.275	25.4	58.4	140.1	
0951	13	117	22.21	7.27	1.275	24.6	58.3	140.3	
0952	14	126	22.25	7.26	1.274	20.2	57.9	140.7	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Initial meter reading : 38.927 Purge rate : 9 gpm 1.4 min. interval

Final meter reading : 39.084

Number of container : 2 bottles

Need lock and 4" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 03DBMW39 | SAMPLE NO.: 03DBMW39-002

START (Date): 11/12/96 (Time): 1630 | END (Date): 11/12/96 (Time): 1720

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Mostly cloudy, calm, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: ——— | ORIG. DTW: 227.62 | FINAL DTW: 229.34

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

275 - 227.62 = 47.38 x 0.93 Gal./Csg Vol. x 3 Csg. Vol. = 132.19 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1638	8	24	25.04	7.11	1.36	619.3	68.0	-9.7	
1642	12	36	25.36	7.13	1.36	219.7	65.7	34.1	
1646	16	48	25.40	7.14	1.36	203.4	63.2	36.3	
1650	20	60	25.64	7.15	1.37	115.7	63.3	38.7	
1654	24	75	25.71	7.16	1.38	91.5	63.4	41.3	
1658	28	90	25.71	7.16	1.37	100.9	63.5	41.4	
1702	32	105	25.72	7.16	1.37	85.9	64.6	42.5	
1706	36	120	25.79	7.17	1.38	82.9	65.1	45.4	
1708	38	126	25.87	7.17	1.38	88.0	65.7	42.4	
1710	40	132	25.87	7.17	1.38	73.7	65.9	42.1	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 03DGMW64 | SAMPLE NO.: 03DGMW64-002

START (Date): 11/12/96 (Time): 1416 | END (Date): 11/12/96 (Time): 1531

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 229.92 | FINAL DTW: 240.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
290	-	229.92	=	60.08	x	55.9	Gal./Csg Vol.	x	3 Csg. Vol. =	168 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 280
1419	3	15	26.20	7.37	1.446	796.0	88.4	42.4	
1423	7	35	25.93	7.35	1.425	282.5	87.1	39.5	
1426	10	50	25.89	7.32	1.419	89.7	84.5	38.6	
1430	14	70	26.03	7.31	1.421	108.2	81.5	35.9	
1433	17	85	25.99	7.27	1.413	562.7	79.5	31.2	Cloudy water
1437	21	105	26.01	7.22	1.416	314.7	77.2	4.4	
1440	24	120	26.02	7.27	1.422	216.3	75.1	-4.2	
1444	28	140	26.13	7.23	1.421	73.0	73.3	8.6	
1447	31	~~155~~ 155	26.46	7.23	1.427	38.8	72.6	27.5	
1451	35	175	26.41	7.23	1.430	15.2	78.5	39.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 30.478 Purge rate: 5 gpm 3.5min. interval

Final meter reading: 30.628

Duplicate sample 03DGMW69-302 at 1530

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 03DGMW64 | SAMPLE NO.: 03DGMW64.002R

START (Date): 12/5/96 (Time): 1537 | END (Date): 12/5/96 (Time): 1618

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: cloudy ~67°F

FIELD PERSONNEL'S NAME(S): Brian Trink (COM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 228.82 | FINAL DTW: 236.70

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

290 - 228.82 = 61.18 x 5.9 Gal./Csg Vol. x 3 Csg. Vol. = 171 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 280'
1542	5	17.5	24.05	7.55	1.786	211.1	35.0	74.1	
1547	10	35.0	24.52	7.52	1.802	70.6	33.4	74.2	
1552	15	52.5	24.78	7.51	1.811	33.6	35.8	75.6	
1557	20	70.0	24.82	7.50	1.811	37.2	41.8	74.6	
1602	25	87.5	24.83	7.48	1.812	54.1	46.5	65.8	
1607	30	105	24.84	7.48	1.830	53.7	53.3	65.9	
1612	35	122.5	24.93	7.48	1.830	68.7	50.7	36.5	
1617	40	140	24.95	7.48	1.830	66.7	47.5	26.9	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals ( ) chromium VI (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry ( ) Treatability Parameters ( )

COMMENT: Initial meter reading: 39,423 Purge rate: 3.5 gpm 4.0 min. interval

Final meter reading: 39,553

Number of containers: 1 bottle

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump

PURGING LOG

WELL NO.: 3DGMW65X | SAMPLE NO.: 3DGMW65X-100C

START (Date): 11/11/96 (Time): 1534 | END (Date): 11/11/96 (Time): 1622

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trinh, Phillip McKay

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 222.01 | FINAL DTW: 222.26

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

275 - 222.01 = 52.92 x 4.92 Gal./Csg Vol. x 3 Csg. Vol. = 148 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 250
1537	3	15	24.74	7.23	1.391	311.7	98.4	95.1	
1540	6	30	24.78	7.23	1.358	253.6	95.3	93.5	
1543	9	45	24.80	7.23	1.330	99.0	93.3	92.1	
1546	12	60	24.81	7.25	1.332	110.5	92.6	90.3	
1549	15	75	24.77	7.23	1.319	186.9	91.3	87.1	
1552	18	90	24.79	7.23	1.322	129.6	90.3	80.2	
1555	21	105	24.87	7.23	1.322	64.4	88.1	72.8	
1558	24	120	24.98	7.25	1.309	23.0	86.1	73.9	
1601	27	135	25.02	7.25	1.305	23.6	85.7	76.1	
1604	30	150	25.01	7.26	1.299	22.7	85.5	78.3	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading 29.720 Pump rate 5 gpm 3 min interval

Final meter reading 29.942

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 03UGMW 2C | SAMPLE NO.: 03UGMW 2C-002

START (Date): 11/14/96 (Time): 0844 | END (Date): 11/14/96 (Time): 0940

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Foggy low cloud High 50°F

FIELD PERSONNEL'S NAME(S): Brian Tink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 217.89 | FINAL DTW: 218.07

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

275 - 217.89 = 57.11 x 53.1 Gal./Csg Vol. x 3 Csg. Vol. = 159 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 250'
0847	3	15	22.97	7.21	1.533	27.1	92.1	124.3	
0850	6	30	24.14	7.20	1.577	40.6	90.3	87.1	
0853	9	45	24.40	7.20	1.595	27.0	92.8	69.2	
0856	12	60	24.47	7.20	1.602	19.6	93.7	66.9	
0900	16	80	24.52	7.19	1.603	9.1	96.3	62.0	
0903	19	95	24.53	7.19	1.605	8.7	95.4	61.5	
0906	22	110	24.54	7.20	1.600	3.9	94.9	76.2	
0909	25	125	24.44	7.20	1.603	4.3	94.5	85.5	
0912	28	140	24.35	7.20	1.592	3.2	95.4	78.5	
0916	32	160	24.42	7.20	1.600	1.1	101.0	70.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading 31,066 Purge rate 5 gpm 3.2min interval

Final meter reading 31,377

Duplicate sample 03UGMW 2C-002 at 0935

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 04DBMW40 | SAMPLE NO.: 04DBMW40_002

START (Date): 11/12/96 (Time): 1127 | END (Date): 11/12/96 (Time): 1202

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 210.60 | FINAL DTW: 210.86

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 / 5" - 0.93 / 6" - 1.50				
265	-	210.60	=	54.4	x	35.9	Gal./Csg Vol.	x	3 Csg. Vol. =	108 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~deg F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 130
1129	2	9	25.67	6.89	1.683	0.2	46.8	103.8	
1132	5	22.5	25.32	6.87	1.666	0.0	45.6	98.8	
1134	7	31.5	25.29	6.88	1.661	1.0	42.5	91.8	
1137	10	45.0	25.26	6.88	1.661	0.0	39.0	87.6	
1139	12	54.0	25.24	6.88	1.659	0.0	36.8	84.3	
1142	15	67.5	25.25	6.87	1.650	0.0	33.0	77.9	
1144	17	76.5	25.25	6.86	1.649	0.4	33.4	77.8	
1147	20	90.0	25.20	6.85	1.644	0.1	31.2	75.4	
1149	22	99.0	25.37	6.85	1.640	0.1	30.5	73.8	
1151	24	108.0	25.48	6.84	1.643	0.0	29.2	72.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 30.305 Purge rate: 4.5 gpm 2.5 min. interval

Final meter reading: 30.477

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 04 DGMW 66 | SAMPLE NO.: 04 DGMW 66 002

START (Date): 11/12/96 (Time): 0853 | END (Date): 11/12/96 (Time): 0955

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~ low 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip Mckay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 211.88 | FINAL DTW: 212.10

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
295	-	211.88	=	83.12	x	77.3	Gal./Csg Vol.	x	3 Csg. Vol. =	232 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 250'
0857	4	20	24.59	7.19	1.193	61.9	93.9	110.4	
0902	9	45	25.14	7.17	1.191	82.3	94.6	104.7	
0906	13	65	25.29	7.17	1.180	40.8	95.2	95.6	
0911	18	90	25.38	7.16	1.176	11.9	94.4	94.7	
0915	22	110	25.45	7.15	1.169	6.1	93.9	95.2	
0920	27	135	25.47	7.15	1.174	5.0	94.8	97.2	
0924	31	155	25.51	7.15	1.176	2.2	93.9	97.9	
0929	36	180	25.54	7.14	1.170	1.6	94.1	99.9	
0935	42	210	25.55	7.14	1.137	1.7	93.8	101.6	
0940	47	235	25.61	7.13	1.136	0.9	97.7	102.3	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 29,941 Purge rate: 5 gpm 4.6 min. interval

Final meter reading: 30,295

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump

PURGING LOG

WELL NO.: 04UGMW63 | SAMPLE NO.: 04UGMW63-002 & 04UGMW63-302

START (Date): 11/14/96 (Time): 0856 | END (Date): 11/14/96 (Time): 1010

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Overcast

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube, H.S.E breeze, 60°F

OVM READING: — | [illegible] 210.40 | FINAL DTW: 211.04

PURGE METHOD: Packers ( ) Multiple ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

280 - 210.40 = 69.6 x 64.73 Gal./Csg Vol. x 3 Csg. Vol. = 194.18 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT
0906	10	30	22.11	6.73	1.91	34.2	41.7	46.9	
0912	16	48	23.90	6.91	1.88	19.8	37.4	43.4	
0918	22	66	24.23	7.04	1.86	11.2	27.6	27.9	
0924	28	84	24.30	7.04	1.84	5.1	22.6	-10.6	
0929	33	102	24.64	7.04	1.85	1.5	15.0	24.6	
0934	38	120	24.64	7.03	1.86	1.7	13.4	31.2	
0939	43	138	24.63	7.03	1.86	1.9	12.7	40.0	
0944	48	156	24.61	7.03	1.87	1.6	11.4	48.0	
0949	53	174	24.69	7.03	1.88	0.7	10.8	52.1	
0954	58	192	24.95	7.03	1.91	2.0	10.1	57.3	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline (X) TPH-Diesel (X) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Duplicate sample #04UGMW63-302 collected.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 05ABMW41 | SAMPLE NO.: 05ABMW41-002

START (Date): 11/13/96 (Time): 1414 | END (Date): (Time):

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Partly cloudy, lt. W breeze, 75%

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 161.54 | FINAL DTW: 161.24

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~WELL TD~~ Tubing radius | ~~ORIGINAL~~ ~~DTW~~ Pump depth | ~~CASING~~ VOLUME | 4" - 0.66 | 5" - 0.93 | 6" - 1.50

0.03125² x 221 x3.14 = 0.6777 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 15.39 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
1418	4	2	22.70	6.66	1.31	8.3	87.5	113.7	
1422	8	4	22.33	7.17	1.29	4.6	84.4	111.8	
1426	12	6	22.42	7.17	1.30	1.4	84.2	111.9	
1430	16	8	22.79	7.19	1.33	4.5	84.5	110.4	
1434	20	10	22.90	7.19	1.37	10.1	86.6	109.5	
1438	24	12	23.04	7.19	1.39	6.7	85.7	108.3	
1442	28	14	23.10	7.19	1.40	7.7	86.4	108.0	
1446	32	16	23.19	7.20	1.41	3.4	90.6	107.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" tubing diam.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 05DGMW67 | SAMPLE NO.: 05DGMW67-002

START (Date): 11/13/96 (Time): 0925 | END (Date): 11/13/96 (Time): 1015

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" ( ) | WEATHER: Partly cloudy, calm, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 165.17 | FINAL DTW: 164.84

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~ Tubing reading	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125² x 220 x3.14 = 0.675 x 7.48 ~~Gal./Csg Vol.~~ gal/ft + 0.06 x 3 Csg. Vol. = 15.32 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
0929	4	2	21.76	7.20	1.46	92.7	62.3	66.4	
0933	8	4	21.70	7.22	1.57	35.4	62.1	60.7	
0937	12	6	21.66	7.21	1.48	52.3	61.4	61.2	
0941	16	8	21.82	7.21	1.45	74.9	57.5	55.1	
0945	20	10	21.89	7.21	1.46	71.2	55.5	53.7	
0948	23	12	22.25	7.21	1.50	22.7	56.0	52.0	
0951	26	14	22.31	7.21	1.45	28.7	53.9	51.1	
0956	30	16	22.70	7.20	1.48	14.6	53.9	45.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Triple volume MS/MSD for SVOC, pesticides herbicides. Low flow purge. 3/4" discharge tube.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 05DBMW63 | SAMPLE NO.: 05DBMW63-002

START (Date): 11/15/96 (Time): 1206 | END (Date): 11/15/96 (Time): 1242

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Hazy sunshine ~ 60°F

FIELD PERSONNEL'S NAME(S): Brian Trish (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 165.84 | FINAL DTW: 166.17

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

215 - 165.84 = 49.16 x 4.57 Gal./Csg Vol. x 3 Csg. Vol. = 137 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 187'
1209	3	18	22.79	6.92	1.549	148.5	94.9	85.5	
1210	4	24	22.92	6.97	1.667	78.1	94.3	81.0	
1213	7	42	22.98	7.03	1.834	55.3	95.4	70.9	
1215	9	54	22.99	7.04	1.872	16.0	95.9	60.9	
1217	11	66	23.00	7.04	1.886	11.2	96.1	54.6	
1220	14	84	23.07	7.05	1.896	7.3	96.7	46.4	
1222	16	96	22.95	7.05	1.908	5.1	97.0	47.9	
1224	18	108	22.92	7.05	1.905	7.5	98.6	51.0	
1227	21	126	22.95	7.06	1.919	2.2	97.9	50.7	
1229	23	138	22.92	7.06	1.919	1.1	98.6	58.9	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides (✓)

Gross Alpha/Beta (✓) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 31.825 Purge rate 6 gpm 2.3 min interval

Final meter reading: 32.044

Number of container: 15 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: 05UGMW27 | SAMPLE NO.: 05UGMW27-002

START (Date): 11/13/96 (Time): 1545 | END (Date): 11/13/96 (Time): 1650

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Overcast, lt. W breeze, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 168.78 | FINAL DTW: 168.78

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

243 - 168.78 = 74.22 x 69.02 Gal./Csg Vol. x 3 Csg. Vol. = 207 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1550	5	20	21.82	7.35	1.37	7.9	76.6	56.4	
1555	10	40	22.07	7.35	1.39	5.9	70.1	62.2	
1600	15	60	22.09	7.35	1.38	7.7	70.0	63.7	
1605	20	80	22.23	7.34	1.37	2.0	72.5	72.4	
1610	25	100	22.56	7.35	1.38	5.4	71.5	82.6	
1615	30	120	22.60	7.36	1.38	4.6	71.3	63.0	
1620	35	140	22.63	7.36	1.38	7.0	70.9	62.9	
1625	40	160	22.64	7.36	1.38	7.4	70.5	65.4	
1630	45	180	22.66	7.36	1.38	7.8	70.1	69.6	
1635	50	200	22.70	7.37	1.38	1.0	70.2	68.6	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: OSNPW1 | SAMPLE NO.: OSNPW1-02

START (Date): 11/13/96 (Time): 1117 | END (Date): 11/13/96 (Time): 1205

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Partly cloudy, calm, 80F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of Sounding tube

OVM READING: — | ORIG. DTW: 163.86 | FINAL DTW: 163.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.66
~~WELL TD~~ Tubing radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125² x 202 x3.14 = 0.619 x 7.48 ~~Gal./Csg Vol.~~ gal/ft to.06 x 3 Csg. Vol. = 14.08 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
1119	2	1	22.70	6.85	1.29	324.0	57.4	47.2	
1123	6	3	23.12	6.98	1.29	142.3	82.0	68.2	
1127	10	5	23.63	6.95	1.30	338.1	82.6	81.5	
1131	14	7	24.27	6.93	1.31	257.3	82.9	83.1	
1135	18	9	24.82	6.92	1.34	201.8	84.3	84.3	
1139	22	11	24.90	6.92	1.33	185.3	85.0	84.5	
1143	26	13	25.05	6.92	1.34	99.1	83.8	83.8	
1147	30	15	25.08	6.91	1.33	81.2	85.0	78.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Tubing diam = 3/4"

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 06UGMW 28 | SAMPLE NO.: 06UGMW 28-001

START (Date): 12/4/96 (Time): 0825 | END (Date): 12/4/96 (Time): 0847

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~65F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CCOM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 137.0 | FINAL DTW: 137.28

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

185 - 137.0 = 48.0 x 3.168 Gal./Csg Vol. x 3 Csg. Vol. = 45 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 160'
0827	2	12	22.64	6.92	2.907	-733.6	85.8	96.0	Brown water
0828	3	18	22.59	6.97	2.762	-685.9	85.6	100.9	
0830	5	30	22.66	6.90	2.887	-654.2	85.5	120.2	
0831	6	36	22.98	6.92	3.074	449.6	85.0	123.6	
0833	8	48	23.20	6.92	3.079	288.3	85.0	122.4	
0834	9	54	23.44	6.92	3.145	215.6	85.0	120.9	
0836	11	66	23.55	6.92	3.220	195.3	85.1	120.1	
0837	12	72	23.57	6.92	3.297	195.0	85.3	119.1	
0839	14	84	23.54	6.92	3.343	200.5	85.4	121.4	
0841	16	96	23.58	6.96	3.372	199.3	85.3	122.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 38.020 Purge rate: 0 gpm 16 min interval

Final meter reading 38.160

Number of container: 4 bottles

Duplicate sample 06UGMW28 302 (4 bottles) collected at 0909

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 07DBMW43 | SAMPLE NO.: C7DBMW43.002

START (Date): 11/21/95 (Time): 1303 | END (Date): 11/21/95 (Time): 1323

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: light rain ~60°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 112.88 | FINAL DTW: 155.04

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 / 5" - 0.93 / 6" - 1.50				
195	-	112.88	=	82.12	x	54.2	Gal./Csg Vol.	x	3 Csg. Vol.	= 163 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at ~~120~~ 165' BT 11/21
1305	2	14	23.42	8.66	1.222	1.6	28.9	116.6	
1307	4	28	23.08	7.89	1.219	0.0	27.2	136.1	
1310	7	49	22.48	8.11	1.253	1.3	22.2	82.9	
1312	~~9~~	~~63~~	22.37	8.08	1.256	1.6	21.9	90.1	Purge rate dropped to 0.5 gpm
1314	11	~~77~~	22.12	7.98	1.263	2.1	21.6	102.3	The well does not produce
1315	~~14~~ 12	~~98~~	21.82	7.89	1.266	2.2	21.1	116.6	enough water to purge
1316	~~16~~ 13	~~112~~	21.65	7.78	1.276	2.4	20.8	123.1	
1321 17	~~18~~ 14	~~126~~	21.62	7.67	1.293	2.4	20.6	126.1	
1324 18	~~21~~ 15	~~147~~	21.64	7.55	1.329	2.5	20.5	121.1	Sample is taken at
1327	24	~~168~~							1320

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 35,335 Purge rate: 7 gpm 2.3 min interval

Final meter reading: 35,409

Number of container: 3 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 07 DGMW 70 | SAMPLE NO.: 07 DGMW 70 . 002

START (Date): 11/21/96 (Time): 1145 | END (Date): 11/21/96 (Time): 1210

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Light rain ~60°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vnotch

OVM READING: 0 | ORIG. DTW: 121.69 | FINAL DTW: 121.83

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
170	-	121.69	=	48.32	x	31.9	Gal./Csg Vol.	x	3 Csg. Vol. =	96.0 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 130'
1148	3	24	23.15	6.95	2.005	0.1	89.8	146.0	
1149	4	32	23.15	6.95	1.982	0.4	90.1	145.2	
1150	5	40	23.18	6.95	1.961	0.9	90.2	143.5	
1151	6	48	23.41	6.92	1.907	1.2	91.1	135.3	
1152	7	56	23.37	6.94	1.899	1.9	90.9	136.7	
1153	8	64	23.35	6.95	1.891	2.2	91.0	136.9	
1154	9	72	23.33	6.95	1.884	2.8	91.3	138.4	
1155	10	80	23.35	6.95	1.882	2.9	91.4	140.4	
1156	11	88	23.30	6.95	1.881	2.3	91.6	143.6	
1157	12	96	23.26	6.95	1.884	2.3	91.7	146.1	Sample collected at
									1200

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 35,145 Purge rate: 8 gpm 1.2 min interval

Final meter reading: 35,336

Number of container: 8 bottles collected

Duplicate sample 07 DGMW 70 . 002 6 bottles at 1220

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 07DGMW71- | SAMPLE NO.: 07DGMW71-002

START (Date): 11/21/95 (Time): 1032 | END (Date): 11/21/95 (Time): 1048

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Low clouds, windy ~64°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CLM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 108.80 | FINAL DTW: 108.95

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50
160 -	108.80 =	51.2 x	33.3 Gal./Csg Vol. x 3 Csg. Vol. = 151 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 120'
1034	2	16.0	23.72	6.87	1.674	2.4	74.2	99.6	
1035	3	24.0	23.43	6.86	1.672	1.7	75.2	100.2	
1036	4	32.0	23.00	6.86	1.669	0.6	76.1	102.5	
1037	5	40.0	22.55	6.86	1.664	0.4	76.6	102.5	
1038	6	48.0	22.25	6.89	1.687	1.0	76.6	97.2	
1040	8	64.0	23.26	6.86	1.705	2.0	79.2	102.3	
1041	9	72.0	23.22	6.86	1.704	2.2	79.4	104.3	
1042	10	80.0	23.15	6.86	1.701	2.4	79.7	107.7	
1044	12	96.0	23.12	6.87	1.699	2.9	80.2	114.1	
1045	13	104.0	23.08	6.87	1.699	3.0	80.4	116.7	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 35,016 Purge rate: 8 gpm 1.3 min interval

Final meter reading: 35,145

Number of container: 3 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 07 DGMW 72 | SAMPLE NO.: 07 DGMW72 - 0002

START (Date): 11/21/96 (Time): 0930 | END (Date): 11/21/96 (Time): 0958

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sun clouds ~ 64°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vnotch

OVM READING: 0 | ORIG. DTW: 102.14 | FINAL DTW: 102.64

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 (circled) / 5" - 0.93 / 6" - 1.50				
155	-	102.14	=	52.86	x	34.9	Gal./Csg Vol.	x	3 Csg. Vol. =	105 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.s.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 110'
0938	2	16	23.59	6.90	1.630	0.9	77.1	96.5	
0939	3	24	23.53	6.90	1.627	0.1	78.0	93.1	
0940	4	32	23.52	6.89	1.627	0.3	79.0	87.0	
0941	5	40	23.50	6.89	1.626	0.7	79.5	86.0	
0942	6	48	23.42	6.89	1.624	1.5	80.0	87.0	
0944	8	64	23.43	6.90	1.621	2.8	80.5	91.1	
0945	9	72	23.39	6.90	1.618	4.2	81.1	96.2	
0946	10	80	23.38	6.90	1.617	4.4	81.2	97.0	
0947	11	88	23.37	6.90	1.616	4.7	81.5	99.6	
0949	13	104	23.36	6.90	1.615	3.3	81.9	103.1	
0950	14	112	23.38	6.90	1.614	3.1	82.0	104.3	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 34,835 Purge rate: 8 gpm 1.3 min interval

Final meter reading: 35.016

Number of container: 9 bottles collected

Need 45" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 07DGMW91 | SAMPLE NO.: 07DGMW91-002

START (Date): 11/21/96 (Time): 0828 | END (Date): 11/21/96 (Time): 0850

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Low cloud ~65°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip Malloy (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vnotch

OVM READING: 0 | ORIG. DTW: 102.49 | FINAL DTW: 102.66

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

155 - 102.49 = 52.51 x 34.7 Gal./Csg Vol. x 3 Csg. Vol. = 104 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/ml)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 130'
0830	2	17	21.25	6.94	1.472	1.0	41.8	12.5	
0831	3	25.5	21.39	6.92	1.485	1.4	42.1	18.5	
0832	4	34.0	21.54	6.91	1.502	1.9	42.1	23.6	
0833	5	42.5	22.03	6.90	1.529	2.8	42.9	33.7	
0834	6	51.0	22.05	6.91	1.538	3.3	43.6	36.7	
0836	8	68.0	22.34	6.90	1.562	1.8	45.1	45.7	
0837	9	76.5	22.57	6.90	1.576	1.4	50.9	50.2	
0838	10	85.0	22.60	6.90	1.580	1.4	52.3	51.6	
0840	12	102.0	22.74	6.90	1.589	1.9	56.1	57.3	
0841	13	110.5	22.80	6.90	1.600	3.9	59.3	62.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 34.644 Purge rate: 8.5 gpm 1.2 min interval

Final meter reading: 34.835

Number of container: 8 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump

PURGING LOG

WELL NO.: 07DBMW100 | SAMPLE NO.: 07DBMW100-002

START (Date): 11/14/96 (Time): 1218 | END (Date): 11/14/95 (Time): 1250

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Overcast, lt. breeze, 65°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: ——— | ORIG. DTW: 103.96 | FINAL DTW: 104.37

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

176 . 103.96 = 72.04 x 0.66 Gal./Csg Vol. x 3 Csg. Vol. = 142.63 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (%)	REDOX (mV)	COMMENT
1220	2	12	23.35	6.60	1.49	204.2	104.7	95.2	
1222	4	24	23.55	6.73	1.51	179.7	103.8	96.1	
1225	7	42	23.60	6.82	1.52	152.3	101.9	97.2	
1228	10	60	23.64	6.85	1.51	100.4	100.4	99.0	
1230	12	72	23.74	6.87	[illegible]	76	100.0	99.9	
1232	14	84	23.71	6[illegible]	[illegible]	47.6	100.5	99.7	
1234	16	96	23.73	6.87	1.55	41.9	101.2	100.2	
1237	19	114	23.78	6.88	1.59	18.3	101.3	101.2	
1240	22	132	23.73	6.88	1.65	12.3	102.8	103.5	
1242	24	144	23.80	6.89	1.67	10.7	102.6	104.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 03DGMW73 | SAMPLE NO.: 03DGMW73-002

START (Date): 12/2/96 (Time): 1557 | END (Date): 12/2/96 (Time): 1622

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 83.36 | FINAL DTW: 83.41

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
155	-	83.36	=	51.64	x	34.1	Gal./Csg Vol.	x	3 Csg. Vol. =	102 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTs)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 110
1600	3	27	22.83	7.14	1.727	228.2	79.8	30.8	
1601	4	36	22.88	7.14	1.794	176.1	77.4	37.9	
1602	5	45	22.97	7.14	1.899	143.5	72.9	38.1	
1603	6	54	23.05	7.14	1.983	96.5	68.4	42.5	
1604	7	63	23.08	7.15	2.012	90.8	66.4	43.3	
1605	8	72	23.13	7.15	2.040	40.5	63.5	45.2	
1606	9	81	23.15	7.15	2.047	37.3	61.9	46.2	
1607	10	90	23.15	7.16	2.049	37.5	61.4	46.4	
1608	11	99	23.16	7.16	2.051	25.0	60.3	47.7	
1609	12	108	23.15	7.16	2.050	~~27.15~~ 27.2	58.1	49.1	Sampled at 1615

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 37.037 Purge rate: 9 gpm 1.1 min. interval

Final meter reading: 37.270

10 bottles

Duplicate sample 03DGMW73-002 at 1635 (10 bottles)

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: OBDGMW 74 | SAMPLE NO.: OBDGMW 74.002

START (Date): 11/13/96 (Time): 0911 | END (Date): 11/13/96 (Time): 0955

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~60°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 85.37 | FINAL DTW: 86.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 2" Grundfos

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

135 - 85.37 = 49.63 x 32.8 Gal./Csg Vol. x 3 Csg. Vol. = 98 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~°F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 79.5
0914	3	9	24.43	7.19	1.395	147.3	92.0	72.0	
0917	6	18	24.18	7.19	1.391	94.8	89.7	71.9	
0921	10	30	24.00	7.19	1.383	32.5	85.8	75.5	DTW 86.26
0924	13	39	24.03	7.20	1.384	24.7	84.5	76.8	
0927	16	48	24.01	7.20	1.395	28.9	83.2	78.1	
0931	20	60	24.00	7.20	1.387	25.0	82.1	79.7	DTW 86.28
0934	23	69	23.99	7.19	1.385	33.2	81.4	69.6	
0937	26	78	23.99	7.19	1.384	30.8	80.9	64.0	
0941	30	90	23.93	7.19	1.380	25.1	80.1	65.8	DTW 86.30
0944	33	99	23.94	7.19	1.380	23.0	79.6	63.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 30.628 Purge rate 3 gpm 3.3 min interval

Final meter reading: 30.734

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: CB UGMW 29 | SAMPLE NO.: CB UGMW 29.002

START (Date): 11/25/96 (Time): 1610 | END (Date): 11/25/96 (Time): 1650

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Cloudy ~ 69°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Hickey (Water Resources)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (Notch)

OVM READING: 0 | ORIG. DTW: 86.49 | FINAL DTW: 86.44

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

140 - 86.44 = 53.56 x 3.3 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = ~~106~~ 53 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 110'
1616	6	9	22.98	6.98	1.692	155.0	206.6	250.0	
1620	10	15	22.84	7.16	1.687	51.3	204.5	250.0	
1623	13	19.5	22.57	7.17	1.680	52.6	212.5	245.0	
1626	16	24.0	22.51	7.17	1.676	54.9	215.6	245.0	
1630	20	30.0	22.43	7.17	1.672	52.5	215.7	240.0	
1633	23	34.5	22.98	7.15	1.677	89.5	242.2	240.0	
1636	26	39.0	23.26	7.15	1.683	157.0	241.6	240.0	
1640	30	45.0	23.99	7.13	1.697	187.0	252.8	240.0	
1643	33	49.5	24.01	7.13	1.713	204.1	268.2	240.0	
1646	36	54.0	24.03	7.12	1.715	197.1	264.8	240.0	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading 35 731 Purge rate 1.5 gpm 3.5 min interval

Final meter reading 35 807

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 09DBMW45 | SAMPLE NO.: 09DBMW45-002

START (Date): 11/15/96 (Time): 1558 | END (Date): 11/18/96 (Time): 1620

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny 69°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC ✓notch

OVM READING: 0 | ORIG. DTW: 118.50 | FINAL DTW: 118.50

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

162 - 118.50 = 43.5 x 28.7 Gal./Csg Vol. x 3 Csg. Vol. = 86 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 140'
1602	4	32	23.52	6.87	2.149	89.7	97.9	57.5	
1603	5	40	23.54	6.87	2.149	37.7	98.7	59.0	
1604	6	48	23.53	6.86	2.146	30.2	99.0	60.9	
1605	7	56	23.50	6.86	2.145	50.1	97.7	61.9	
1606	8	64	23.50	6.86	2.144	24.6	94.1	63.2	
1607	9	72	23.49	6.87	2.137	28.8	93.5	64.5	
1608	10	80	23.49	6.87	2.137	26.3	93.3	65.7	
1609	11	88	23.49	6.87	2.130	30.0	93.0	69.8	
1610	12	96	23.49	6.86	[illegible]	29.7	93.3	71.9	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 32,362 Purge rate: 8 gpm 1.0 min interval

Final meter reading: 32,524

Number of container: 8 bottles collected

Need 45" cap and lock

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 09DGMW75 | SAMPLE NO.: 09DGMW75-002

START (Date): 12/4/96 (Time): 1332 | END (Date): 12/4/96 (Time): 1353

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 111.90 | FINAL DTW: 112.0

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
159	-	111.90	=	47.1	x	31.1	Gal./Csg Vol.	x	3 Csg. Vol.	= 93.3 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (~~oF~~) °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (~~mg/l~~) %	REDOX (mV)	COMMENT Pump set at 130'
1334	2	14	23.42	6.71	2.588	-687.2	83.7	107.7	
1335	3	21	23.47	6.73	2.635	-687.2	87.8	112.3	
1336	4	28	23.54	6.75	2.695	-26.6	86.6	113.2	
1337	5	35	23.56	6.78	2.607	464.9	85.8	111.6	
1338	6	42	23.59	6.79	2.559	399.1	85.3	110.6	
1339	7	49	23.63	6.80	2.503	254.1	84.5	110.9	
1341	9	63	23.65	6.81	2.433	267.1	83.1	112.8	
1342	10	70	23.66	6.82	2.413	153.7	83.1	112.8	
1344	12	84	23.65	6.81	2.380	102.9	83.3	113.2	
1346	14	98	23.66	6.81	2.363	77.2	83.2	112.6	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 38,642 Purge rate: 7 gpm 13 min interval.

Final meter reading: 38,791

Number of container: 6 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 10DGMW77 | SAMPLE NO.: 10DGMW77-002

START (Date): 12/4/96 (Time): 1118 | END (Date): 12/4/96 (Time): 1145

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 104.33 | FINAL DTW: 104.42

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

175 - 104.33 = 70.67 x 46.6 Gal./Csg Vol. x 3 Csg. Vol. = 140 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 120'
1120	2	14	24.11	7.09	1.757	799.1	93.7	123.6	
1122	4	28	24.16	7.08	1.785	279.1	95.2	125.8	
1124	6	42	24.33	7.05	1.841	169.5	96.3	121.3	
1126	8	56	24.42	7.04	1.847	139.2	96.3	117.1	
1128	10	70	24.48	7.01	1.861	66.3	97.3	114.1	
1130	12	84	24.55	7.00	1.870	57.2	97.5	114.6	
1132	14	98	24.63	6.98	1.886	39.9	98.0	116.2	
1134	16	112	24.64	6.98	1.889	38.2	98.4	117.0	
1136	18	126	24.64	6.98	1.895	25.5	98.8	120.3	
1138	20	140	24.64	6.97	1.899	22.7	99.2	122.5	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 38.466 Purge rate: 7 gpm 2 min interval

Final meter reading: 38.642

Number of container: 9 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 12DBMW+3 | SAMPLE NO.: 12DBMW+3-100C

START (Date): 11/13/96 (Time): 1242 | END (Date): 11/13/96 (Time): 1411

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 90.29 | FINAL DTW: 89.74

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 2"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

140 - 90.29 = 49.71 x 32.5 Gal./Csg Vol. x 3 Csg. Vol. = 98 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~°F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~mg/l~~	REDOX (mV)	COMMENT Pump set at 100 5'
1345	3	12	25.09	6.98	2.052	67.4	99.5	112.5	
1347	5	20	24.43	6.96	2.118	121.2	95.6	103.7	
1350	8	32	24.28	6.94	2.143	138.7	94.4	97.0	DTW 92.84
1352	10	40	24.31	6.94	2.159	58.9	93.4	87.9	
1355	13	52	24.26	6.92	2.157	70.5	93.8	85.2	
1357	15	60	24.14	6.92	2.145	48.5	94.7	80.4	DTW 92.90
1400	17	72	24.17	6.92	2.135	33.9	95.2	78.3	
1402	20	80	23.87	6.92	2.121	31.1	96.1	75.4	
1405	23	92	23.95	6.92	2.119	23.0	96.1	72.8	
1407	25	100	23.98	6.92	2.118	25.6	96.4	72.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 30.838 Purge rate 4 gpm 25 min interval

Final meter reading: 30.946

Need 45" cap and new lock

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 12UGMW31 | SAMPLE NO.: 12UGMW31-002

START (Date): 11/13/96 (Time): 1534 | END (Date): 11/13/96 (Time): 1609

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: sunny ~65°F - 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V-notch

OVM READING: 0 | ORIG. DTW: 96.20 | FINAL DTW: 95.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
150	-	96.20	=	53.8	x	35.5	Gal./Csg Vol.	x	3 Csg. Vol. =	107 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~°F~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~mg/l~~	REDOX (mV)	COMMENT Pump set at 112.5'
1537	3	12	23.81	6.92	1.466	106.0	101.2	116.7	
1539	5	15	23.90	6.92	1.469	30.6	101.2	115.3	
1541	7	28	23.93	6.92	1.463	50.3	101.3	116.2	DTW 96.80
1544	10	40	23.92	6.92	1.457	51.6	102.1	117.4	Clear water
1546	12	48	23.93	6.92	1.466	69.0	102.1	118.5	
1549	15	60	23.93	6.92	1.460	57.0	102.0	119.5	
1551	17	68	23.92	6.92	1.469	49.7	100.3	119.9	
1554	20	80	23.92	6.91	1.470	152.7	102.7	121.0	
1556	22	88	23.94	6.92	1.472	77.5	99.2	120.4	DTW 96.82
1600	26	104	23.89	6.92	1.469	48.6	100.4	120.2	
1602	28	112	23.89	6.91	1.469	41.2	100.5	119.4	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides (✓)

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 30,945 Purge rate 4 gpm 2.6 min interval

Final meter reading: 31,066

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 13DBMW49 | SAMPLE NO.: 13DBMW49-002

START (Date): 11/19/96 (Time): 1517 | END (Date): 11/19/96 (Time): 1600

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Foggy, lt. breeze, 60F

FIELD PERSONNEL'S NAME(S): S. Martin

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: ——— | ORIG. DTW: 129.02 | FINAL DTW: 128.40

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED WELL TD~~	~~ORIGINAL DTW~~	~~CASING~~ VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

0.0825² x 175 x3.14 = 0.54 x 7.48 ~~Gal./Csg Vol.~~ +0.06 x 3 Csg. Vol. = 12.22 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1523	6	3	23.92	7.05	3.35	0.7	7.1	102.9	N	
1525	8	4	24.17	7.04	3.27	1.3	3.1	98.1	N	
1527	10	5	24.44	7.04	3.28	1.2	2.7	96.7	N	
1529	12	6	24.74	7.04	3.28	1.1	2.1	95.1	N	
1531	14	7	24.93	7.03	3.28	0.6	1.6	92.7	N	
1533	16	8	25.04	7.03	3.28	1.0	1.3	90.6	N	
1535	18	9	25.06	7.03	3.29	0.8	1.2	90.4	N	
1537	20	10	25.06	7.03	3.29	0.6	1.1	89.0	N	
1539	22	11	25.06	7.03	3.29	0.4	1.0	87.4	N	
1541	24	12	25.15	7.04	3.28	0.1	0.9	84.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Discharge tubing diam = 3/4"
Collected duplicate sample # 13DBMW49-302 at 1555

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 13DGMW78 | SAMPLE NO.: 13DGMW78-002

START (Date): 11/19/96 (Time): 1421 | END (Date): 11/19/96 (Time): 1455

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Foggy, lt. breeze, 60°F

FIELD PERSONNEL'S NAME(S): S. Moffitt

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sandy tube

OVM READING: — | ORIG. DTW: 126.10 | FINAL DTW: 125.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ WELL TD	~~ORIGINAL~~ ~~DTW~~	~~CASING~~ VOLUME	4" - 0.66 5" - 0.93 6" - 1.50
Tubing diam	Pump depth		

0.03125² x 168 x3.14 = 0.52 x 7.48 ~~Gal/Csg Vol.~~ gal/ft 10.06 x 3 Csg. Vol. = 11.74 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1425	4	2	24.0	6.90	3.93	39.7	5.7	100.5	N	
1427	6	3	24.07	6.90	3.85	11.3	5.1	97.5	N	
1429	8	4	24.09	6.89	3.80	1.3	4.6	95.2	N	
1431	10	5	24.41	6.89	3.81	0.9	4.3	93.5	N	
1433	12	6	24.55	6.89	3.81	0.5	4.1	92.5	N	
1437	16	8	24.89	6.89	3.83	0.2	3.6	87.9	N	
1439	18	9	24.96	6.89	3.84	0.3	3.5	86.9	N	
1441	20	10	25.05	6.89	3.85	0.5	3.4	85.3	N	
1443	22	11	25.02	6.89	3.83	0.6	3.3	83.5	N	
1445	24	12	25.09	6.89	3.83	0.6	3.2	82.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Disch. Tubing diam = 3/4 inch

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 14DBMW50 | SAMPLE NO.: 14DBMW50 - 002

START (Date): 11/19/96 (Time): 1317 | END (Date): 11/19/96 (Time): 1348

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Foggy, lt. W breeze, 60°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sample tube

OVM READING: — | ORIG. DTW: 119.96 | FINAL DTW: 119.74

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	~~4" - 0.66~~
WELL TD Tubing radius	DTW Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.0325² x 150 x3.14 = 0.46 x 7.48 ~~Gal./Csg Vol.~~ gal/ft 10.06 x 3 Csg. Vol. = 10.5 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1319	2	1	23.20	4.13	3.07	43.9	40.9	168.9	N	
1321	4	2	23.32	5.25	3.09	21.1	31.6	143.7	N	
1323	6	3	23.43	6.42	3.10	10.8	14.8	122.2	N	
1325	8	4	23.61	6.60	3.11	10.6	13.9	108.6	N	
1327	10	5	23.77	6.81	3.11	10.4	12.0	96.0	N	
1329	12	6	24.42	6.87	3.14	9.2	11.8	87.1	N	
1331	14	7	24.46	6.89	3.15	8.6	11.4	87.2	N	
1333	16	8	24.73	6.92	3.16	6.8	11.3	85.4	N	
1335	18	9	24.76	6.95	3.17	6.5	11.0	83.9	N	
1337	20	10	24.79	6.97	3.18	6.5	10.9	82.1	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Discha. tubing diam = 3/4"

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump (X)

PURGING LOG

WELL NO.: 14DGMW79 | SAMPLE NO.: 14DGMW79-002

START (Date): 11/19/96 (Time): 1223 | END (Date): 11/19/96 (Time): 1255

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Foggy, calm, 60°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of dry tube

OVM READING: — | ORIG. DTW: 118 | FINAL DTW: 118.30

PURGE METHOD: Packers ( ) Multiple Port ( ) Tail Trailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TD~~ ~~DTW~~ VOLUME 5" - 0.93

~~[illegible]~~ Pump depth 6" - 1.50

Tubing radius

x3.14

0.03125^2 x 150 = 0.46 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 10.5 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1226	3	1.5	23.59	6.98	3.52	59.7	3.4	72.3	Y	
1228	5	2.5	23.85	6.98	3.55	40.0	0.4	72.7	Y	
1231	8	4	24.07	6.98	3.56	11.7	0.1	70.3	Y	
1233	10	5	24.37	6.98	3.59	0.4	0.0	66.6	Y	
1236	13	6.6	24.80	6.97	3.64	0.3	0.0	60.8	Y	
1239	16	8	24.98	6.97	3.64	0.03	0.0	60.8	Y	
1242	19	9.5	24.99	6.96	3.64	0.03	0.0	58.6	Y	
1245	22	11	24.99	6.96	3.64	0.02	0.0	57.3	Y	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. Disch. tubing diam = 3/4"

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 15DBMW51 | SAMPLE NO.: 15DBMW51-002

START (Date): 12/4/96 (Time): 1440 | END (Date): 12/4/96 (Time): 1504

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CCIM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 119.68 | FINAL DTW: 135.04

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
170	-	119.68	=	50.32	x	33.2	Gal./Csg Vol.	x	3 Csg. Vol.	= 99.6 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (~~oF~~) °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % (~~mg/l~~)	REDOX (mV)	COMMENT Pump set at 140'
1442	2	13	24.70	6.77	4.744	609.0	72.5	161.7	
1443	3	19.5	24.35	6.83	4.131	27.7	65.1	157.5	
1445	5	32.5	24.01	6.86	4.332	23.0	57.3	155.6	
1446	6	39	24.07	6.86	4.464	24.6	53.7	154.2	
1448	8	52	24.21	6.87	4.691	20.9	45.0	150.4	
1449	9	59.5	24.24	6.86	4.790	20.6	40.6	149.0	
1451	11	71.5	24.27	6.86	4.848	18.8	37.5	147.7	
1452	12	78	24.38	6.87	4.891	22.2	35.9	146.7	
1453	13	84.5	24.40	6.88	4.931	15.9	33.7	146.6	
1456	16	104	24.43	6.88	4.995	10.9	33.5	149.1	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 38,791 Purge rate: 6.5 gpm 1.5 min interval.

Final meter reading: 38,943

Number of container: 11 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 16DBMW52 | SAMPLE NO.: 16DBMW52-002

START (Date): 11/25/96 (Time): 1041 | END (Date): (Time):

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Clear, lt. breeze, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 170.42 | FINAL DTW: 170.26

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~ ~~WELL TO~~ Tubing radius	~~ORIGINAL~~ ~~DTW~~ Pump depth	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

0.0326² x 220 x3.14 = 0.67 x 7.48 ~~Gal./Csg Vol.~~ +0.06 x 3 Csg. Vol. = 15.3 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (%)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1043	2	1	24.25	7.20	2.04	137.0	78.0	96.7	N	
1047	6	3	24.40	7.26	2.05	141.3	72.2	94.3	N	
1049	8	4	24.66	7.34	2.06	74.1	70.0	92.9	N	
1052	11	6	24.87	7.26	2.06	69.0	74.7	93.9	N	
1056	15	8	25.07	7.36	2.06	45.0	69.7	91.5	N	
1102	21	10	25.22	7.38	2.06	38.6	68.7	90.9	N	
1107	26	12	25.34	7.38	2.05	33.3	69.0	90.6	N	
1111	30	13	25.43	7.38	2.05	27.3	72.2	89.9	N	
1113	31	14	25.42	7.38	2.05	27.1	70.6	89.7	N	
1115	33	15	25.45	7.38	2.04	22.9	69.4	89.7	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" discharge tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 -009 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 16-DGMW81 | SAMPLE NO.: 16-DGMW81-002

START (Date): 1/8/97 (Time): 0905 | END (Date): 1/8/97 (Time): 0950

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear

FIELD PERSONNEL'S NAME(S): Mike Oliphant

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: N/A | ORIG. DTW: 164.41 | FINAL DTW: 164.41

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME			
			4" - 0.66		
			5" - 0.93		
			6" - 1.50		
221	164.41	= 56.59	x 37.35 Gal./Csg Vol.	x 3 Csg. Vol.	= 112 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm 2.5

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ mg/l	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0905		0	24.62	7.23	2.19	46.6	128.6	91.3		
0910	5 min	12½	24.63	7.18	2.17	37.2	124.4	91.4		
0915		25	24.64	7.14	2.18	24.4	123.7	91.7		
0920		37.5	~~7.15~~ 24.69	7.13	2.18	21.5	123.3	91.5		
0925		50	24.71	7.13	2.18	11.8	119.8	91.3		
0930		62.5	24.69	7.12	2.15	8.4	121.3	91.7		
0935		75	24.75	7.12	2.18	6.2	119.6	91.6		
0940		87.5	24.75	7.12	2.18	6.1	115.1	91.3		
0945		100	24.90	7.11	2.19	5.7	116.1	92.3		
0950		112.5	24.93	7.11	2.18	5.7	123.0	93.1		

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump (X)

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: last 3 readings within acceptable range.
Air contaminate blank collected at 1020 sample #16DGMW81-902
VOCs, SVOC, TPH-GAS / TPH-DIESEL

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 164GMW33-002 | SAMPLE NO.: 164GMW33-002

START (Date): 11/25/96 (Time): 1253 | END (Date): 11/25/96 (Time): 1335

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" ( ) | WEATHER: Clear, calm, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 172.48 | FINAL DTW: 172.40

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED WELL TO~~ Turbidity readings	~~ORIGINAL DTW~~ Purge depth	~~CASING~~ VOLUME	~~1" - 0.65~~ 5" - 0.93 6" - 1.50				
0.03125² x	219 x3.14 =	0.67 x	7.48 ~~Gal./Csg Vol.~~ gal/ft to.06	x	3 Csg. Vol.	=	15.25 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1255	2	1	23.26	7.06	1.02	20.7	70.1	99.2	N	
1301	8	4	24.23	7.23	1.03	14.5	68.3	97.5	N	
1305	12	6	24.30	7.24	1.03	7.9	67.8	96.9	N	
1307	14	7	24.34	7.25	1.03	5.3	67.5	96.4	N	
1311	18	9	24.80	7.26	1.04	8.3	67.0	95.3	N	
1315	22	11	24.95	7.26	1.05	1.9	67.3	94.8	N	
1317	24	12	24.96	7.26	1.05	2.3	67.4	94.7	N	
1319	26	13	24.97	7.26	1.05	3.2	67.5	94.7	N	
1321	28	14	24.98	7.26	1.05	3.6	67.5	94.7	N	
1323	30	15	25.01	7.25	1.05	1.5	67.6	94.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" discharge tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: 17DGMW82 | SAMPLE NO.: 17DGMW82-002

START (Date): 11/20/96 (Time): 1153 | END (Date): 11/20/96 (Time): 1245

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, lt. Wbreeze, 85°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sampling tube

OVM READING: — | ORIG. DTW: 185.88 | FINAL DTW: 251.30

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

260 - 185.88 = 64.13 x 0.93 Gal./Csg Vol. x 3 Csg. Vol. = 178.87 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1158	5	20	23.16	7.01	1.48	80.9	0.0	-401	N	
1202	9	36	24.90	6.98	1.46	51.7	4.2	-392	N	
1206	13	52	25.13	6.92	1.46	40.9	8.7	-382.2	N	
1210	17	68	25.24	6.91	1.46	38.2	9.2	-371.2	N	
1214	21	84	25.36	6.90	1.47	34.7	10.4	-356.9	N	
1218	25	105	25.48	6.90	1.47	39.2	11.2	-349.3	N	
1222	29	126	25.69	6.89	1.48	35.3	13.9	-325.2	N	
1226	33	143	25.72	6.90	1.48	33.1	15.5	-325.9	N	
1230	37	161	25.91	6.94	1.49	30.6	20.4	-306.0	N	
1234	41	180	25.94	6.94	1.49	27.3	22.1	-301.0	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides (X) Herbicides (X)
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 17NEW1 | SAMPLE NO.: 17NEW1-002

START (Date): 11/20/96 (Time): 1105 | END (Date): 11/20/96 (Time): 1147

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Hazy, med. W breeze, 75°F

FIELD PERSONNEL'S NAME(S): S Marthis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 182.99 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

~~MEASURED~~ ~~WELL TO~~ Tubing radius | ~~ORIGINAL~~ ~~DTW~~ Pump depth | ~~CASING~~ VOLUME | 4" - 0.66 | 5" - 0.93 | 6" - 1.50

0.03125² x 225 x3.14 = 0.69 x 7.48 ~~Gal./Csg Vol.~~ gal/ft 40.06 x 3 Csg. Vol. = 15.66 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN %	REDOX (mV)	Air Bubbles observed? (yes/no)	COMMENT
1108	3	1.5	23.56	7.00	0.92	120.4	140.1	-261.3	N	
1111	6	3	23.94	7.02	0.93	115.6	135.1	-254.8	N	
1114	9	4.5	24.30	7.03	0.94	74.3	123.0	-256.2	N	
1117	12	6	24.71	7.06	0.94	80.6	103.0	-238.7	N	
1120	15	7.5	25.03	7.06	0.95	73.5	96.8	-231.2	N	
1123	18	9	25.28	7.05	0.95	67.6	92.4	-231.2	N	
1126	21	10.5	25.53	7.05	0.95	64.1	84.7	-231.1	N	
1129	24	12	25.59	7.05	0.96	51.3	81.2	-227.4	N	
1133	28	14	25.70	7.04	0.96	41.9	79.2	-229.4	N	
1137	32	16	25.70	7.05	0.96	40.5	76.2	-237.0	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)

Unfiltered Metals ( ) Pesticides (X) Herbicides (X)

Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 17NEW2 | SAMPLE NO.: 17NEW2-002

START (Date): 11/20/96 (Time): 1008 | END (Date): 11/20/96 (Time): 1037

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, lt. W breeze, 75°F

FIELD PERSONNEL'S NAME(S): S. Nathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 88.18 | FINAL DTW: 88.20

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~WELL TD~~ Tubing radius	~~ORIGINAL~~ ~~DTW~~ Pump depth	~~CASING~~ VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

0.03125² . 121 x3.14 = 0.371 x 7.48 gal/ft ~~Gal./Csg Vol.~~ +0.06 x 3 Csg. Vol. = 8.51 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	Air Bubbles observed? (yes/no)	COMMENT
1009	1	0.5	22.10	7.40	0.88	15.7	14.6	-469.2	N	
1010	2	1	22.30	7.39	0.87	10.9	12.7	-470.9	N	
1012	4	2	22.53	7.39	0.87	8.4	10.3	-472.3	N	
1014	6	3	22.69	7.38	0.87	7.4	7.1	-478.3	N	
1016	8	4	22.94	7.37	0.88	5.2	5.2	-481.7	N	Cleaned ORP probe
1018	10	5	23.42	7.36	0.89	5.1	4.9	-481.5	N	
1020	12	6	23.47	7.35	0.89	5.0	4.3	-482.5	N	
1022	14	7	23.47	7.35	0.89	5.6	3.6	-485.9	N	
1024	16	8	23.71	7.37	0.90	5.2	3.1	-487.6	N	
1026	18	9	24.01	7.38	0.90	4.3	2.7	-493.2	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X)
Unfiltered Metals ( ) Pesticides (X) Herbicides (X)
Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low Flow purge. 3/4" tubing

Triple volume collected for MS/MSD for SVOC's, Pesticides, Herbicides

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP06-A-002

Project MCAS El Toro Location El Toro Depth 449 Date 11/8/96

Drillhole No. 18BGMP06 Sampling Zone No. A Starting Time 0930 Finishing Time 1015

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 97.20 (End of Session) 97.63

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	171.15	✓	179.73	✓	✓	✓	171.20	1	
2	✓	✓	✓	✓	✓	✓	171.23	✓	179.78	✓	✓	✓	171.16	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1000	22.91	57	0.918	5.2	97.4	-29.7	
1015	22.73	7.15	0.917	[illegible]	[illegible]	-34.0	

Westbay

Groundwater Sampling

18 BGMP06-B-002

Field Data Sheet

Project MCAS EI TORO Location EI TORO Depth 383 Date 11/8/96

Drillhole No. 18BGMP06 Sampling Zone No. B Starting Time 1025 Finishing Time 1100

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 97.63 (End of Session) 97.86

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	142.42	✓	140.01	✓	✓	✓	142.84	1	
2	✓	✓	✓	✓	✓	✓	142.78	✓	140.02	✓	✓	✓	142.71	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1040	22.80	7.42	0.562	4.2	94.9	-30.6	N

Westbay

Groundwater Sampling

18BGMP06-C-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 299 Date 11/18/96

Drillhole No. 18BGMP06 Sampling Zone No. C Starting Time 1115 Finishing Time 1145

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 97.86 (End of Session) 98.07

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	105.74	✓	113.48	✓	✓	✓	105.81	1	
2	✓	✓	✓	✓	✓	✓	105.68	✓	113.49	✓		✓	105.73	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1123	23.03	7.[illegible]	0.805	3.7	81.8	-34.5	N
1145	23.30	7.[illegible]	0.957	7.2	98.1	-32.0	N

Westbay

Groundwater Sampling

18BGMP06-D-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 172 Date 11/8/96

Drillhole No. 18BGMP06 Sampling Zone No. D Starting Time 1200 Finishing Time 1245

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 98.07 (End of Session) 98.21

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	50.44	✓	69.13	✓	✓	✓	50.41	1	
2	✓	✓	✓	✓	✓	✓	50.45	✓	69.14	✓	✓	✓	50.40	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp (oF)	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO % (MG/L)	Redox (mV)	Air Bubbles (Y OR N)
1220	22.78	7.29	1.754	0.1	72.1	-32.5	N
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N

Westbay

Groundwater Sampling
Field Data Sheet

18BGMP06-E-002

Project MCAS EI TORO Location EI TORO Depth 108 Date 11/8/96
Drillhole No. 18BGMP06 Sampling Zone No. E Starting Time 1245 Finishing Time 1345
Technicians Mike Oliphant
Water Level Inside MP Casing (Beginning of Session) 98.21 (End of Session) 98.48
Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	22.90	✓	41.04	✓	✓	✓	22.90	1	
2	✓	✓	✓	✓	✓	✓	22.93	✓	41.03	✓	✓	✓	22.89	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1300	22.79	6.3	1.572	3.3	82.5	-178.9	N

Page ___ of ___

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP08 - A-002

Project MCAS El Toro Location El Toro Depth 442 Date 11/7/96

Drillhole No. 18BGMP08 Sampling Zone No. A Starting Time 1040 Finishing Time 1140

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 40.26 (End of Session) 40.66

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	192.83	✓	180.19	✓	✓	✓	192.83	1	
2	✓	✓	✓	✓	✓	✓	192.83		180.22	✓	✓	✓	192.81	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(mg/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1100	21.49	7.58	1.435	4.8	74.8	-196.0	N
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Page ____ of ____

Westbay

Groundwater Sampling

18BGMP08-~~B~~C-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 300 Date 11/7/96

Drillhole No. 18BGMP08 Sampling Zone No. ~~B~~ C Starting Time 1140 Finishing Time 1310

Technicians Mike Oilphant

Water Level Inside MP Casing (Beginning of Session) 40.66 (End of Session) 41.15

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	130.83	✓	120.81	✓	✓	✓	130.84	1	
2	✓	✓	✓	✓	✓	✓	130.84	✓	120.84	✓	✓	✓	130.81	1	
3	✓	✓	✓	✓	✓	✓	130.79	✓	120.86	✓	✓	✓	130.83	1	
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO % ~~(MG/L)~~	Redox (mV)	Air Bubbles (Y OR N)
1215	21.28	7.	0.843	~~177~~ 1.1	117.4	-206.4	

Westbay

Groundwater Sampling
Field Data Sheet

18BG-MP08-D-002

Project MCAS El Toro Location El Toro Depth 130 Date 11/7/96
Drillhole No. 18BGMP Sampling Zone No. D Starting Time 1320 Finishing Time 1410
Technicians Mike Oliphant
Water Level Inside MP Casing (Beginning of Session) 41.15 (End of Session) 41.34
Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	54.72	✓	53.11	✓	✓	✓	56.73	1	
2	✓	✓	✓	✓	✓	✓	54.70	✓	53.12	✓	✓	✓	56.71	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(eF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1330	21.80	7.48	1.202	177.3	67.7	-213.3	N

Page ____ of ____

Westbay

Groundwater Sampling

18BGMP08-E-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 70 Date 11/7/96

Drillhole No. 18BGMP08 Sampling Zone No. E Starting Time 1430 Finishing Time 1520

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 41.34 (End of Session) 41.55

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	30.58	✓	26.49	✓	✓	✓	30.54	1	
2	✓	✓	✓	✓	✓	✓	30.57	✓	26.41	✓	✓	✓	30.51	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1440	21.35	7.	0.955	178.1	54.7	-232.1	

Westbay

Piezometric Pressures/Levels

Field Data and Calculation Sheet

Datum:_____ Pressure Probe Type: Transducer Client: MCAS El Toro Date: 11/7/96

Elev. Ground Sfc:_____ Serial No.: EMS 1056 Job No.: 6206-009 Drillhole No.: ~~W~~ BGMP08

Height MP Casing above Ground Sfc:_____ Range: 0 to 750 psia kg/cm² mH_2O Location: El Toro

Elev. top of MP Casing:_____ Weather: clear Casing Size/Type: 2" MP

Reference Elev. Steel Casing:_____ Barometric Pressure: 14.89 Operator: Mike Oliphant

Ambient Reading (Pressure/Temperature/Time): Start 14.89 / 31.62 / 1005 Finish 14.91 / 1035 / 26.22

Zone No.	Port Depth ft. m.	Fluid Pressure Readings psia kg/cm² mH_2O Inside Casing P(I)	Outside Casing P(o)	Inside Casing P(I)	Trans. Temp., °K, °C	Time, H:M:S	Depth to Water in MP ft. m. Dmp	ΔH (ft. m.) = P(o) - P(I) / w	Piez. Level Outside Port, ft. m. Dz = Dmp - ΔH	Comments
4	442	191.03			25.95	1017	36.98			
			180.15		25.93	1018				
			180.15	191.00	25.92	1019				
3	300	129.17			25.35	1020				
			120.87		25.08	1021	37.66			
			120.89	129.24	24.78	1022				
2	130	55.24			23.64	1024	38.50			
			53.18		23.13	1025				
			53.15	55.26	22.95	1026				
1	70	29.13			22.66	1027	38.80			
			26.47		22.33	1028				
			26.49	29.18	22.28	1029				

* see Operations Manual for explanation of calculation method

09/11/90 - MR

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP09A-002

Project MCAS El Toro Location El Toro Depth 457 Date 11/13/96

Drillhole No. 18BGMP09 Sampling Zone No. 6 Starting Time 1100 Finishing Time 1245

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 68.26 (End of Session) 68.62

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	186.54	✓	190.50	✓	✓	✓	186.54	1	Broke two shoes at this port, possible that
2	✓	✓	✓	✓	✓	✓	186.54	✓	190.45	✓	✓	✓	186.54	1	object is at port
3															that won't allow shoe
4															to deploy without
															breakage!
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1210	21.87	8.117	3.955	0.4	126.6	-270.0	N
1240	23.36	8.126	4.181	0.5	138.5	-265.0	

Westbay

Groundwater Sampling

18BGMP09B-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 377 Date 11/13/96

Drillhole No. BGMP09 Sampling Zone No. 5 Starting Time 1300 Finishing Time 1405

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 68.62 (End of Session) 68.92

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	152.11	✓	156.92	✓	✓	✓	152.11	1	
2	✓	✓	✓	✓	✓	✓	152.22	✓	156.94	✓	✓	✓	152.04	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 1

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1342	24.53	7.66	2109	1.7	164.2	-245.6	N
1404	24.02	7.57	1.233	5.2	124.5	-247.3	N

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP09C-002

Project MCAS El TORO Location El TORO Depth 272 Date 11/13/96

Drillhole No. BGMP09 Sampling Zone No. 4 Starting Time 1420 Finishing Time 1450

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 68.92 (End of Session) 69.15

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
Run No.	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	106.17	✓	112.57	✓	✓	✓	106.	1	
2	✓	✓	✓	✓	✓	✓	106.32	✓	112.65	✓	✓	✓	106.32	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1435	22.75	8.1	0.754	1.5	131.4	-252.7	Y

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP09D-002

Project MCAS El TORO Location El TORO Depth 226 Date 11/13/96

Drillhole No. BGMP09 Sampling Zone No. 3 Starting Time 1510 Finishing Time 1545

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 69.15 (End of Session) 69.27

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	85.86	✓	92.24	✓	✓	✓	85.62	1	
2	✓	✓	✓	✓	✓	✓	85.83	✓	92.25	✓	✓	✓	85.83	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1530	22.91	7.81	0.997	0.3	128.5	-251.3	N
1545	22.06	7.77	0.705	1.0	151.6	-249.1	N

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP09E-00Z

Project MCAS El Toro Location El Toro Depth 137 Date 11/13/96

Drillhole No. BGMP09 Sampling Zone No. 2 Starting Time 1600 Finishing Time 1645

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 69.27 (End of Session) 69.36

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	47.08	✓	53.23	✓	✓	✓	47.13	1	
2	✓	✓	✓	✓	✓	✓	47.10	✓	53.25	✓	✓	✓	47.13	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.s.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1620	22.13	7.12	0.726	0.3	164.2	-253.2	
1645	21.57	7.12	0.851	0.9	120.3	-220.8	N

Westbay

Groundwater Sampling

18BGMP09F-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 62 Date 11/13/96

Drillhole No. BGMP09 Sampling Zone No. 1 Starting Time 1700 Finishing Time 1745

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 69.36 (End of Session) 69.36

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	14.82	✓	20.72	✓	✓	✓	14.82	1	
2	✓	✓	✓	✓	✓	✓	14.82	✓	20.75	✓	✓	✓	14.84	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1720	21.94	7.60	1.072	1.9	91.6	-255.8	N
1745	21.43	7.62	0.977	0.6	83.1	-257.7	N

Westbay

Groundwater Sampling

18BGMP10A-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 1005 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. F Starting Time 1100 Finishing Time 1210

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 0.00 (End of Session) 11.01

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	450.04	✓ ~~423.2~~	423.07	✓	✓	✓	450.07	1	MP casing full of
2	✓	✓	✓	✓	✓	✓	450.03	✓	423.13	✓	✓	✓	450.07	1	water and overflowed
3															when I inserted probe
4															and sample bottles
5															2x40 ml VOAs
6															1x 16oz WA/gore
7															Rinsate collected
8															18BGMP10A-502 at
9															1130
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1140	20.76	7	1.130	2.8	175.6	-348.7	
1205	20.26	.16	1.097	0.7	159.6	-365.7	

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP10B-002

Project MCAS El TORO Location El TORO Depth 988 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. E Starting Time 1220 Finishing Time 1335

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 11.01 (End of Session) 11.16

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	399.51	✓	374.28	✓	✓	✓	399.57	1	2x40ml VOA
2	✓	✓	✓	✓	✓	✓	399.52	✓	374.28	✓	✓	✓	399.56	1	1x16oz Nitrogen
3	✓	✓	✓	✓	✓	✓	399.49	✓	374.25	✓	✓	✓	399.51	1	1x1l amber glass SVOC
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1245	20.64	7.56	0.861	0.8	148.5	-351.4	Y
1335	20.49	7.48	1.102	2.2	178.1	-328.1	Y

Westbay

Groundwater Sampling

18BGMP10C-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 755 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. D Starting Time 1345 Finishing Time 1420

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 11.16 (End of Session) 11.27

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	341.23	✓	317.05	✓	✓	✓	341.25	1	2x40ml VOA 1x16oz NAlgene
2	✓	✓	✓	✓	✓	✓	341.29	✓	317.04	✓	✓	✓	341.26	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1400	20.90	8.44	0.722	0.5	122.7	-387.2	
1420	20.26	8.21	0.707	3.1	177.1	-359.6	

Westbay

Groundwater Sampling

18BGMP10D-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 562 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. C Starting Time 1435 Finishing Time 1530

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 11.27 (End of Session) 11.45

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
Run No.	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	259.31	✓	237.15	✓	✓	✓	259.33	1	2 x 40ml VOA
2	✓	✓	✓	✓	✓	✓	259.31	✓	237.13	✓	✓	✓	259.38	1	1 x 16oz Nalgene
3	✓	✓	✓	✓	✓	✓	259.40	✓	237.12	✓	✓	✓	259.42	1	1 x 1l Amber glass SVOC
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1445	20.42	8.16	0.791	2.1	149.7	-355.9	Y
1530	20.43	9.26	0.796	2.2	156.8	-361.3	Y

Westbay

Groundwater Sampling

Field Data Sheet

18BGMP10E-002

Project MCAS El Toro Location El Toro Depth 432 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. B Starting Time 1540 Finishing Time 1615

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 11.45 (End of Session) 11.61

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	200.57	✓	187.54	✓	✓	✓	200.59	1	2x40ml VOA
2	✓	✓	✓	✓	✓	✓	200.58	✓	187.52	✓	✓	✓	200.56	1	1x16oz NAlgone
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1550	20.30	7.[illegible]7	0.855	0.3	137.4	-363.1	
1615	20.73	7.[illegible]4	1.119	2.6	140.4	-353.3	

Westbay

Groundwater Sampling

18BGMP10F-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 222 Date 11/19/96

Drillhole No. 18BGMP10 Sampling Zone No. A Starting Time 1625 Finishing Time 1705

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 11.61 (End of Session) 11.73

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	109.14	✓	112.00	✓	✓	✓	109.13	1	2x 40 ml VOA
2	✓	✓	✓	✓	✓	✓	109.14	✓	112.03	✓	✓	✓	109.12	1	1x 16 oz Walgene
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1635	19.1	not operating					
1635	19.17	7.35	2.13	.1	122	-335	N
1720	19.17	7.35	2.13	.1	122	-335	N

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW01A-002 | SAMPLE NO.: 18BGMW01A-002

START (Date): 11/6/96 (Time): 1455 | END (Date): 11/8/96 (Time): 0930

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: clear, lt. W breeze, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 207.23 | FINAL DTW: >300'

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

491 - 207.23 = 283.77 x 2.93.91 Gal./Csg Vol. x 3 Csg. Vol. = 791.7 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
1505	10	30	25.45	6.90	2.22	0.3	8.8	+177.2	
1515	20	60	25.65	7.08	2.23	0.2	0.0	-195.9	
1525	30	90	25.86	7.08	2.23	0.2	0.0	-203.5	
1535	40	120	26.03	7.07	2.24	0.1	0.0	-208.7	
1545	50	150	26.12	7.06	2.24	0.0	0.0	-212.9	
1555	60	180	26.23	7.06	2.25	0.0	0.0	-215.0	Purge rate down to 1.5 gpm
1625	90	200	26.49	7.05	2.26	0.0	0.0	-223.4	Stopped to empty tank.
1710	110	220	25.77	7.05	2.23	0.0	0.0	-222.5	Restarted @ 1650.
1725	125	240	26.03	7.05	2.24	0.0	0.0	-225.9	Stopped pump.

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline (X) TPH-Diesel (X) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: DTW on 11/8/96 (0910) is still >300'. Collected sample with no further purging.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW01B | SAMPLE NO.: 18BGMW01B-002

START (Date): 11/6/96 (Time): 1034 | END (Date): 11/6/96 (Time): 1405

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, calm, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 203.54' | FINAL DTW: 269.74

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

421 - 203.54 = 217.46 x 2.02 Gal./Csg Vol. x 3 Csg. Vol. = 606.7 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1044	10	30	25.62	7.21	1.21	0.4	2.8	-163.1	
1054	20	60	25.93	7.20	1.21	0.3	5.7	-142.2	
1104	30	90	26.20	7.22	1.21	0.7	11.0	-121.5	
1114	40	120	26.52	7.23	1.22	3.1	14.5	-106.6	
1124	50	150	26.71	7.23	1.23	1.4	17.9	-93.0	
1134	60	180	26.87	7.23	1.24	1.0	22.1	-82.3	
1144	70	200	26.90	7.23	1.23	1.5	24.4	-76.6	Stopped pump. Went to empty purge tank
1314	90	230	26.27	7.20	1.21	0.9	37.1	-50.4	Restarted @ 1304
1324	90	260	26.61	7.23	1.22	0.8	31.7	-45.0	
1334	100	290	26.66	7.25	1.22	0.5	28.6	-46.3	
1344	110	320	26.85	7.30	1.22	6.5	26.8	-49.3	
1354	120	350	26.93	7.31	1.23	5.6	27.0	-45.6	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline (X) TPH-Diesel (X) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO: 6206 TEAM: Westbay 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO: 18BGMW01C SAMPLE NO: 18BGMW01C-002

START Date: 11/5/96 Time: 0953 END Date: 11/5/96 Time: 1040

WELL CASING DIAMETER: 2" ( ) 4" ( ) 6" (X) WEATHER: Overcast, calm, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — ORIG. DTW: 202.90 FINAL DTW: 206.89

PURGE METHOD: Packers (X) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED WELL TO	~~ORIGINAL DTW~~ Packer depth	CASING VOLUME	4" - 0.66 / 6" - 0.93 / 8" - 1.50

355 - 326 = 29 x 26.97 Gal./Csg. Vol. x 3 Csg. Vol. = 81 Gal.

PURGE WATER CONTAINERIZED? YES AVERAGE PURGE RATE: 2.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.u.)	COND. (umhos/cm)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0959	6	15	25.03	7.21	1.20	89.2	41.4	-58.6	Y	
1002	9	23	25.10	7.22	1.20	85.4	44.1	-48.6	Y	
1005	12	30	25.27	7.23	1.19	27.6	51.4	-24.3	Y	
1008	15	38	25.38	7.22	1.17	26.5	58.1	-10.1	Y	
1011	18	45	25.50	7.21	1.15	21.3	63.0	7.2	Y	
1014	21	53	25.55	7.21	1.14	27.4	64.4	11.0	Y	
1017	24	60	25.70	7.20	1.15	17.9	63.9	19.8	Y	
1020	27	68	25.75	7.20	1.14	18.3	64.9	20.2	Y	
1023	30	75	25.97	7.19	1.09	3.7	76.9	28.3		
1026	33	83	26.05	7.17	1.09	1.3	84.3	31.5	Y	
~~1029~~	36									

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer (X) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( ) TPH (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Packer pressure = 88 psi

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW01D | SAMPLE NO.: 18BGMW01D-002

START (Date): 11/1/96 (Time): 1340 | END (Date): 11/1/96 (Time): 1430

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, lt. breeze, 75°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of Sample tube

OVM READING: — | ORIG. DTW: 204.73 | FINAL DTW: 205.34

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

267 - 204.73 = 62.27 x 5.79 Gal./Csg Vol. x 3 Csg. Vol. = 173.7 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1344	4	16	24.8	7.08	1.15	426	0.3	84.8	
1348	8	32	25.25	7.10	1.15	17	0.0	72.0	
1352	12	48	25.39	7.08	1.17	161	0.0	65.7	
1356	16	64	25.48	7.07	1.21	1.1	0.4	65.3	
1400	20	80	25.47	7.05	1.25	0.6	2.1	65.6	
1404	24	96	25.51	7.05	1.25	0.5	2.4	66.7	
1408	28	112	25.47	7.05	1.26	2.7	3.1	66.9	
1412	32	128	25.21	7.04	1.27	0.1	5.7	70.7	
1416	36	144	25.53	7.04	1.25	0.5	7.9	69.9	
1420	40	160	25.58	7.04	1.23	1.0	8.9	57.3	
1424	44	176	25.57	7.04	1.22	1.0	9.3	70.5	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( ) (X) TPH
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW01D | SAMPLE NO.: 18BGMW01D-002R

START (Date): 11/27/96 (Time): 0850 | END (Date): 11/27/96 (Time): 0955

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, mod breeze, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: ——— | ORIG. DTW: 204.14 | FINAL DTW: 204.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
267	-	204.14	=	62.86	x	0.93	Gal./Csg Vol.	x	3 Csg. Vol.	= 175 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0854	4	12	24.81	7.27	1.46	132.3	11.6	79.5	Y	
0900	10	30	25.12	7.23	1.49	7.4	7.4	72.8	Y	
0906	16	48	25.32	7.20	1.54	6.3	7.4	68.3	Y	
0912	22	66	25.43	7.17	1.63	5.7	7.4	64.2	Y	
0918	28	84	25.46	7.17	1.64	1.9	8.1	64.5	Y	
0924	34	102	25.54	7.16	1.67	11.5	9.9	66.4	Y	
0930	40	120	25.50	7.16	1.67	9.9	10.1	66.7	Y	
0936	46	138	25.48	7.16	1.67	9.0	10.1	66.7	Y	
0942	52	156	25.61	7.16	1.68	8.7	10.8	68.7	Y	
0948	58	174	25.58	7.15	1.70	2.5	11.8	71.7	Y	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Resample. Original holding time missed

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW01E | SAMPLE NO.: 18BGMW01E-002

START (Date): 11/1/96 (Time): 1527 | END (Date): 11/1/96 (Time): 1555

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" ( ) | WEATHER: Clear, lt. breeze, 75°F

FIELD PERSONNEL'S NAME(S): S Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 204.00 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

230 - 204 = 26 x 17.16 Gal./Csg Vol. x 3 Csg. Vol. = 51.48 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 2.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1529	2	5	25.13	7.24	1.39	154	10.1	123	
1531	4	10	25.13	7.05	1.227	3.1	1.2	98.1	
1533	6	15	25.19	7.07	1.26	6.1	0.0	91.5	
1535	8	20	25.25	7.07	1.28	2.7	0.0	82.0	
1537	10	25	25.28	7.07	1.32	3.8	0.0	71.5	
1539	12	30	25.34	7.07	1.31	2.1	0.0	62.3	DTW 216.24'
1541	14	35	25.42	7.07	1.29	1.2	0.0	58.9	
1543	16	40	25.42	7.06	1.29	0.9	0.0	59.4	
1545	18	45	25.47	7.06	1.29	2.0	0.0	59.2	
1547	20	50	25.47	7.06	1.28	3.5	0.0	59.2	
1549	22	55	25.49	7.05	1.29	0.9	0.0	58.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides (X) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW02A | SAMPLE NO.: 18BGMW02A-002

START (Date): 11/18/96 (Time): 1211 | END (Date): 11/19/96 (Time): 1015

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, lt. W breeze, 80F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 161.42 | FINAL DTW: >300'

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

487 - 161.42 = 325.58 x 0.93 Gal./Csg Vol. x 3 Csg. Vol. = 908 Gal.
x 1.5 = 454 gal

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1221	10	30	25.04	7.52	1.19	1.4	7.3	-266.8	N	
1231	20	60	25.33	7.51	1.17	0.9	1.1	-271.7	N	
1241	30	90	25.68	7.50	1.18	0.9	0.0	-279.2	N	Pump off to empty tank.
1442	47	140	26.04	7.47	1.19	1.5	0.0	-260.8	N	Restarted @ 1425
1459	64	190	26.68	7.48	1.20	0.7	0.0	-283.4	N	
1516	81	240	26.68	7.48	1.21	0.8	0.0	-289.6	N	
1540	105	250	26.91	7.48	1.21	0.7	0.0	-295.7	N	Purge rate 1 gpm
1622	127	290	27.11	7.48	1.21	7.1	0.0	-303.1	N	Pump off. Waiting
0907	134	311	24.25	7.66	1.13	11.4	4.3	-185.3	N	Started pump 11/19 @ 0900
0923	150	360	25.39	7.67	1.15	3.8	0.0	-171.3	N	
0936	163	400	25.71	7.67	1.16	2.2	0.0	-179.7	N	
0950	177	430	25.92	7.67	1.17	1.9	0.0	-187.9	N	
1005	192	460	26.11	7.67	1.17	1.5	0.0	-185.2	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( ) TPH gas (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides (X)
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Note that ORP was recalibrated at 1315. Readings appear to be correct

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 02BGMW02C | SAMPLE NO.: 02BGMW02C-002

START (Date): 11/5/96 Time: 1154 | END (Date): 11/5/96 Time: 1520

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Partly cloudy, calm, 80°F

FIELD PERSONNEL'S NAME(S): S. Martin

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 162.36 | FINAL DTW: 245.74

PURGE METHOD: Packers (X) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED WELL TD	~~ORIGINAL DTW~~ Packer Depth	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

383 - 354 = 29 x 26.97 Gal./Csg Vol. x 3 Csg. Vol. = 80.91 Gal.
383 162.36 220.64 205.20 615.6

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1215	21	60	25.16	6.91	0.985	19.2	26.0	-8.9	N	
1225	31	100	25.30	7.30	0.985	12.3	11.7	-6.1	N	
1235	41	140	25.94	7.30	0.998	10.3	15.5	-3.8	N	
1245	51	170	26.00	7.30	1.001	10.6	18.8	-11.2	N	
1255	61	200	25.87	7.31	0.995	9.4	20.4	-13.6	N	Pump off, emptied purge tank.
1420	71	230	25.14	7.33	0.984	7.0	30.4	35.4	N	Restarted @ 1410
1430	81	260	25.31	7.34	0.984	4.0	29.1	38.7	N	
1440	91	300	25.50	7.35	0.991	2.6	27.8	39.1	N	
1450	101	330	25.53	7.35	0.991	3.4	26.9	36.5	N	
1500	110	370	25.53	7.35	0.991	6.4	25.8	31.3	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( ) TPH (X)
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Packer failed.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW02D | SAMPLE NO.: 18BGMW02D-002

START (Date): 11/5/96 (Time): 1550 | END (Date): 11/6/96 (Time): 1000

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Overcast, calm, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 163.84 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME		
			4" - 0.66 5" - 0.93 6" - 1.50	
319 -	163.84 =	155.16 x	144.30 Gal./Csg Vol. x	3 Csg. Vol. = 432.9 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1557	7	25	23.70	7.38	1.05	9.8	3.6	-123.8	N	
1603	13	45	24.11	7.38	1.05	1.8	0.9	-92.3	Y	
1610	20	70	24.41	7.38	1.07	0.9	0.0	-91.0	Y	
1616	26	90	24.40	7.38	1.07	9.8	0.0	-91.8	N	
1623	33	105	24.86	7.38	1.08	12.9	0.0	-94.2	N	
1629	39	120	25.07	7.38	1.08	6.0	0.0	-92.3	N	
1636	46	140	25.14	7.37	1.09	3.0	0.4	-79.5	N	
1642	52	150	23.95	7.38	1.06	3.1	0.5	-69.4	N	Well purged dry.
0915	57	170	23.82	7.28	1.04	11.4	26.8	24.0	Y	Began sampling @ 0910 on 11/6/96
0925	67	200	24.61	7.30	1.06	7.4	26.3	34.6	Y	
0930	72	220	24.76	7.30	1.07	7.2	26.7	36.5	N	
0935	77	235	24.97	7.30	1.07	7.4	27.0	34.8	N	
0940	82	255	25.21	7.31	1.07	10.1	27.4	28.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO: 6206 TEAM: Westbay 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO: 18BGMW02E SAMPLE NO: 18BGMW02E-002

START Date: 11/1/96 Time: 1640 END Date: 11/1/96 Time: 1730

WELL CASING DIAMETER: 2" ( ) 4" ( ) 6" (X) WEATHER: Clear, calm, 65°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — ORIG. DTW: 166.08 FINAL DTW: 165.77

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

238 - 166.08 = 71.92 x 66.89 Gal./Csg Vol. x 3 Csg. Vol. = 200.66 Gal.

PURGE WATER CONTAINERIZED? YES AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP °C	pH (s.u.)	COND. (umhos/cm)	TURB. (NTU)	DISSOLVED OXYGEN %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1644	4	20	23.11	6.66	1.19	194	63.0	87.5	Y	
1648	8	40	23.48	6.95	1.20	125	65.2	83.0	Y	
1652	12	60	23.72	6.96	1.21	47.7	91.4	77.6	Y	
1656	16	80	23.73	6.96	1.21	48.0	92.6	77.7	Y	
1700	20	100	23.77	6.96	1.19	33.5	99.1	76.4	Y	
1704	24	120	23.79	6.96	1.19	28.7	100.0	76.0	Y	
1708	28	140	23.74	6.96	1.18	54.0	95.0	77.1	Y	
1712	32	160	23.76	6.96	1.18	48.2	94.1	77.2	Y	
1716	36	180	23.60	6.96	1.16	24.6	98.9	74.9	Y	
1720	40	200	23.54	6.96	1.16	23.9	99.1	74.7	Y	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( ) TPH (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: High D.O. readings may be due to entrained air or a change in the barometric pressure.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (X)

PURGING LOG

NO.: 188GMW02E | SAMPLE NO.: 188GMW02E-002R

START (Date): 11/27/96 (Time): 1010 | END (Date): 11/27/96 (Time): 1045

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, lt. NE breeze, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sonde tube

OVM READING: — | ORIG. DTW: 166.00 | FINAL DTW: 116.45

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~ ~~WELL TD~~ Tubing readings	~~ORIGINAL~~ ~~DTW~~ Pump depth	~~CASING~~ VOLUME	4" - 0.66 6" - 0.93 6" - 1.50

0.03125² x 200 x 3.14 = 0.61 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 13.7 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1016	6	3	23.19	7.05	1.49	129.1	82.5	113.5	N	
1022	12	6	23.59	7.02	1.49	92.7	75.2	117.4	N	
1026	16	8	24.13	7.01	1.52	71.4	75.8	118.9	N	
1030	20	10	24.46	6.98	1.53	6.13	75.8	120.3	N	
1034	24	12	24.64	7.00	1.53	35.2	77.8	121.2	N	
1038	28	14	24.67	6.98	1.53	23.7	77.5	121.8	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA ( ) SVOA ( ) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Resample. Original holding time blown.

Low Flow purge. 3/4" tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump (

PURGING LOG

WELL NO.: 18BGMW3A | SAMPLE NO.: 18BGMW3A-002

START (Date): 11/7/96 (Time): 0857 | END (Date): 11/7/96 (Time): 0947

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Tank, Philip McKeen (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 115.18 | FINAL DTW: 115.72

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

395 - 115.18 = 279.82 x 2.80 Gal./Csg Vol. x 1.5 Csg. Vol. = 390 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 146'
0902	5	45	23.99	7.78	0.361	0.5	41.2	32.2	
0907	10	90	24.29	7.87	0.361	0.0	37.0	27.7	
0911	14	126	24.53	7.92	0.361	1.7	40.6	28.0	
0915	18	162	24.88	7.95	0.363	0.7	44.9	29.3	
0920	23	207	25.33	7.80	0.833	24.4	47.8	48.7	
0925	28	252	25.70	7.10	1.076	57.5	68.1	35.0	
0930	33	297	25.78	7.07	1.096	21.7	91.3	40.3	
0935	38	342	25.80	7.07	1.050	10.7	98.8	46.8	
0940	43	387	25.78	7.07	1.079	6.9	102.4	50.6	
0945	48	432	25.79	7.07	1.072	1.2	101.3	55.3	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 26298 Purge rate: 9 gpm 5 min interval

Final meter reading: 26751

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BGMW 3B | SAMPLE NO.: 18BGMW 3B - 002

START (Date): 11/7/96 (Time): 1079 | END (Date): 11/7/96 (Time): 1130

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKee (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 109.00 | FINAL DTW: 109.13

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

305 - 109 = 196 x 1.82 Gal./Csg Vol. x 1.5 Csg. Vol. = 273 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 146'
1052	3	25.5	23.91	7.12	0.610	2.2	55.8	60.4	
1056	7	59.5	24.06	6.97	0.875	74.8	93.6	73.9	Air bubbles entrained in the flow
1100	11	93.5	24.25	6.98	0.891	93.0	~~93.6~~ 104.9	81.8	
1103	14	119	24.48	7.01	0.856	52.6	104.3	94.4	
1106	17	144.5	24.72	7.02	0.870	397.4	101.1	56.9	Air bubbles in the flow [illegible]
1110	21	178.5	24.71	7.02	0.875	150.0	102.2	38.6	
1113	24	204.0	24.82	7.03	0.876	81.8	101.7	39.3	
1117	28	238.0	24.91	7.02	0.854	231.8	105.2	37.6	
1120	31	263.5	24.86	7.01	0.869	158.9	107.1	40.4	
1123	34	289.0	24.87	7.02	0.870	196.9	105.2	42.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading = 35.751 Purge rate = 5 gpm 3 min interval

Final meter reading = 37.021

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump (

PURGING LOG

WELL NO.: 18 BGMW 3C | SAMPLE NO.: 18 BGMW 3C - 002

START (Date): 11/6/96 (Time): 1530 | END (Date): 11/6/96 (Time): 1556

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder, Brian Trink, Phuthong

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 106.68 | FINAL DTW: 106.85

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

247 - 106.68 = 140.32 x 0.93 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 196 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (~~°F~~) °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % (~~mg/l~~)	REDOX (mV)	COMMENT Pump set at 125'
1532	3	27	23.80	10.85	0.429	0.0	56.4	-80.7	
1534	5	45	23.83	10.75	0.431	0.0	55.9	-79.7	
1536	7	63	23.93	7.48	0.830	23.4	104.9	19.3	
1539	10	90	24.04	7.30	0.871	10.6	104.9	31.0	
1541	12	108	24.10	7.17	0.927	11.0	106.1	34.4	
1543	14	126	24.14	7.14	0.923	16.8	113.4	31.3	
1545	16	144	24.17	7.12	0.932	3.3	112.7	29.9	
1547	18	162	24.17	7.12	0.929	3.1	113.3	30.2	
1549	20	180	24.17	7.11	0.918	3.4	112.5	31.9	
1551	22	198	24.17	7.11	0.913	10.4	112.8	33.0	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 26669 Purge rate 9 gpm 2.1 mm interval

Final meter reading 26799

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW03E | SAMPLE NO.: 18BGMW03E-002

START (Date): 11/21/96 (Time): 1451 | END (Date): 11/21/96 (Time): 1520

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Raining, overcast, 60°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 106.65 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TD~~ Tubing radius ~~DTW~~ Pump depth VOLUME 5" - 0.[illegible]

6" - 1.50

0.3125² x 160 x 3.14 = 0.49 x 7.48 gal/ft to 0.06 ~~Gal./Csg Vol.~~ x 3 Csg. Vol. = 11.19 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles observed? (yes/no)	COMMENT
1452	1	0.5	23.47	6.30	1.46	294.2	32.6	144.7	N	
1453	2	1	23.44	6.76	1.46	250.6	38.8	132.7	N	
1455	4	2	23.61	6.92	1.46	203.7	41.8	125.8	N	
1457	6	3	23.79	6.95	1.47	184.3	45.7	123.9	N	
1459	8	4	23.97	6.98	1.47	176.6	48.9	121.6	N	
1501	10	5	24.05	6.96	1.47	176.3	51.3	120.4	N	
1503	12	6	24.12	6.95	1.48	176.0	54.6	119.2	N	
1505	14	7	24.18	6.95	1.48	175.7	56.4	115.6	N	
1509	18	9	24.23	6.95	1.47	175.5	57.0	114.2	N	
1511	20	10	24.29	6.95	1.48	142.7	54.7	111.5	N	
1513	22	11	24.71	6.95	1.47	125.1	54.5	101.7	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( ) TAHgod (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT: Low flow purge. 3/4" tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump (

PURGING LOG

WELL NO.: 18 BGMW4A. | SAMPLE NO.: 18BGMW4A.002

START (Date): 11/11/96 (Time): 1115 | END (Date): 11/11/96 (Time): 1156

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Tanh Philip McKay

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 90.66 | FINAL DTW: 90.92

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66
			5" - 0.93
			6" - 1.50

311 - 90.66 = 220.34 x 205 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 307 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 125'
1118	3	25.5	23.73	6.94	1.118	1.7	88.7	99.5	
1122	7	59.5	23.62	6.92	1.105	10.7	86.9	101.0	
1125	10	85.0	23.83	6.91	1.105	3.7	85.5	102.4	
1129	14	119.0	24.15	6.89	1.110	2.1	84.4	103.4	
1132	17	144.5	24.42	6.88	1.113	4.1	83.7	104.0	
1136	21	178.5	24.86	6.86	1.102	71.9	81.2	102.2	
1139	24	204.0	25.23	6.86	1.077	95.6	78.8	99.4	
1143	28	238.0	25.43	6.87	1.068	84.3	77.5	93.7	
1146	31	263.5	25.48	6.87	1.069	33.4	75.7	88.3	
1150	35	297.5	25.60	6.86	1.071	19.6	74.8	85.6	
1153	30	323.0	25.61	6.86	1.072	19.2	74.2	84.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 29.213 Purge rate 8.5 gpm 3.5 min interval

Final meter reading: 29.598

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW04B | SAMPLE NO.: 18BGMW04B-002

START (Date): 11/14/96 (Time): 1505 | END (Date): 11/14/96 (Time): 1635

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Overcast, mod breeze, 65°F

FIELD PERSONNEL'S NAME(S): S. Mattas

REFERENCE POINT OF DEPTH MEASUREMENT:

OVM READING: — | ORIG. DTW: 84.72 | FINAL DTW: 86.34

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

215 - 84.72 = 130.28 x 0.66 Gal./Csg Vol. x 3 Csg. Vol. = 257.95 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % (mg/l)	REDOX (mV)	COMMENT
1509	4	28	22.75	6.98	1.59	428.1	102.5	57.1	
1512	7	49	22.65	6.98	1.60	272.0	103.3	70.5	
1516	11	77	23.10	6.98	1.65	171.4	102.8	76.1	
1519	14	98	23.16	7.00	1.71	89.7	103.6	82.4	
1523	18	126	23.21	7.01	1.74	47.6	104.0	88.8	
1526	21	147	23.21	7.02	1.77	36.9	112.7	100.8	
1530	25	175	23.28	7.03	1.77	33.6	104.9	110.0	
1533	28	200	23.30	7.03	1.77	25.7	102.9	105.7	Stopped to empty tank.
1618	32	228	23.27	6.56	1.77	136.5	100.5	126.9	Restarted pump @ 1614
1620	34	242	23.29	6.58	1.78	125.7	100.9	126.1	
1622	36	256	23.30	6.60	1.78	119.0	101.6	125.7	
1624	38	270	23.34	6.66	1.79	36.6	107.2	125.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BGMW05A | SAMPLE NO.: 18BGMW05A-002

START (Date): 1/8/97 (Time): unknown | END (Date): 1/9/97 (Time): 0900

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: clear

FIELD PERSONNEL'S NAME(S): Mike Olyphant

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: — | ORIG. DTW: 199.9 | FINAL DTW: ~ 450'

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
487	-	199.9	=	287.1	x	267.	Gal./Csg Vol.	x	3 Csg. Vol.	= 801 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 15 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0854	2min	10	25.90	7.53	5.87	6.6	7.4	-142.0		Clear, odor
0856	2min	20	26.02	7.53	5.87		3.8	-145.3		sulfer
0858	2min	30	26.03	7.57	5.84	5.5	3.5	-147.5		
0900	2min	40	25.98	7.57	5.84	5.3	2.1	-148.8		

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump (✓)

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( ) TPH-GAS
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( ) TPH-Diesel
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: OHM arrived on 1/8/97 and purged the well dry: Pumped 300' water column with a 1½ hp Franklin motor rated at 15gpm. this motor is not variable speed so I will get 3 consecutive readings and sample

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BGMW 5B | SAMPLE NO.: 18 5GMW 5B -002

START (Date): 11/7/96 (Time): 1311 | END (Date): 11/7/96 (Time): 1402

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Nelson (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 84.72 | FINAL DTW: 85.33

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

346 - 84.72 = 261.28 x 2.43 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 365 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 104'
1315	4	36	23.30	6.95	1.062	0.4	59.1	63.3	
1319	8	72	23.51	6.95	1.096	0.2	62.1	66.9	
1323	12	108	23.88	6.96	1.094	0.5	61.5	69.3	
1327	16	144	24.29	6.97	1.105	0.9	62.3	70.9	
1331	20	180	24.80	6.97	1.115	0.0	67.4	71.8	
1335	24	216	25.30	6.98	1.125	6.7	67.4	40.6	Air bubbles in turbine, clear water
1339	28	252	25.51	6.95	1.149	12.0	75.5	27.5	
1343	32	288	25.58	6.98	1.152	5.8	79.5	33.4	
1347	36	324	25.63	7.00	1.153	7.6	83.8	24.2	
1351	40	360	25.64	7.00	1.154	10.2	89.8	40.2	
1355	44	396	25.65	7.00	1.153	1.5	90.9	42.2	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 27091 Purge rate 9 gpm 4 min interval

Final meter reading: 27521

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 029 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BGMW 5C | SAMPLE NO.: 18 BGMW 5C 0902

START (Date): 11/7/96 (Time): 1445 | END (Date): 11/7/96 (Time): 1517

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: [illegible]

FIELD PERSONNEL'S NAME(S): Brian Trim (CDM), Martin McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 81.76 | FINAL DTW: 81.83

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

250 - 81.76 = 168.24 x 1.56 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 235 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 104'
1448	3	28.5	23.47	7.15	1.151	0.3	94.7	67.9	
1451	6	57.0	23.48	7.15	1.148	0.7	94.1	70.1	
1454	9	85.5	23.7[illegible]	7.14	1.144	1.2	94.8	72.7	
1457	12	114	24.05	7.13	1.149	3.1	94.1	75.2	
1500	15	142.5	24.31	7.11	1.151	37.2	93.3	77.1	
1503	18	171	24.[illegible]	7.10	1.15[illegible]	27.7	96.8	74.9	
1506	21	199.5	24.46	7.10	1.146	24.3	100.7	72.9	
1509	24	228	24.45	7.10	1.139	10.6	100.2	71.3	
1512	27	256.5	24.45	7.09	1.137	6.5	98.3	71.1	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 27521 Purge rate 7.5 gpm 3 min interval

Final meter reading: 27837

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW05D | SAMPLE NO.: 18BGMW05D-002

START (Date): 12/4/96 (Time): 1000 | END (Date): 12/4/96 (Time): 1036

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" ( ) 6" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CQM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 81.70 | FINAL DTW: 81.92

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50				
138	- 81.70	= 56.3	x	84.45 Gal./Csg Vol.	x	3 Csg. Vol.	= 253 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 110'
1003	3	24	23.54	7.07	1.630	973.5	90.7	87.6	
1006	6	48	22.77	6.96	1.641	173.7	85.5	89.4	
1009	9	72	22.56	6.92	1.647	237.5	80.6	90.9	
1012	12	96	22.61	6.92	1.651	272.7	77.3	90.0	
1015	15	120	22.68	6.90	1.666	135.0	74.4	86.3	
1018	18	144	22.71	6.90	1.705	73.9	71.5	84.4	
1021	21	168	22.81	6.90	1.728	54.3	70.0	85.4	
1024	24	192	22.81	6.89	1.743	28.8	69.1	86.2	
1027	27	216	22.79	6.89	1.758	21.9	68.8	87.2	
1030	30	240	22.78	6.89	1.771	25.1	67.9	88.3	
1032	32	256	22.79	6.89	1.775	25.7	67.6	88.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 38.160 Purge rate: 8 gpm 3.2 min interval

Final meter reading: 38.466

Number of container: 6 bottles

Recommend put bottles on well cover lid. 4 empty plastic bottles were found in the well at 81' deep

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (NA) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 18BGMW12 | SAMPLE NO.: 18BGMW12-002

START (Date): 11/25/96 (Time): 1623 | END (Date): 11/25/96 (Time): 1705

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Partly cloudy, calm, 70°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 154.90 | FINAL DTW: 1'

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	~~4" - 0.66~~
~~WELL TD~~ Tubing diam.	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125 x 200 x3.14 = 0.61 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 13.94 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1627	4	2	23.80	7.22	2.51	237.4	15.8	73.6	N	
1631	8	4	24.15	7.32	2.52	116.4	9.3	67.3	N	
1633	10	5	24.39	7.33	2.52	106.8	5.6	60.0	N	
1637	14	7	25.10	7.33	2.53	104.4	2.3	52.1	N	
1639	16	8	25.30	7.33	2.56	97.5	1.6	48.7	N	
1641	18	9	25.36	7.33	2.56	78.9	1.3	45.1	N	
1643	20	10	25.51	7.33	2.57	68.9	1.5	43.2	N	
1647	24	12	25.73	7.33	2.60	44.8	1.6	37.1	N	
1649	26	13	25.90	7.32	2.59	37.3	1.1	32.6	N	
1651	28	14	25.96	7.32	2.60	32.0	1.1	31.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( ) TPH (X)

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" tubing

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW14 | SAMPLE NO.: 18BGMW14-002

START (Date): 11/15/96 (Time): 0942 | END (Date): 11/15/96 (Time):

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Hazy sunshine ~ 60°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0.000 | ORIG. DTW: 70.08 | FINAL DTW: 70.02

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 2"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

120 - 70.08 = 49.92 x 32.9 Gal./Csg Vol. x 3 Csg. Vol. = 99 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 85'
0945	3	9	21.61	6.62	2.178	556.2	66.8	40.5	
0948	6	18	21.71	6.63	2.194	351.8	64.4	37.8	
0952	10	30	21.78	6.64	2.204	157.1	63.6	40.6	DTW 72.45
0955	13	39	21.74	6.64	2.231	90.3	64.2	40.9	
0958	16	48	21.68	6.63	2.233	67.2	65.4	44.1	
1002	20	60	21.84	6.61	2.250	57.5	68.9	50.1	DTW 72.52
1005	23	69	21.84	6.61	2.250	63.8	70.4	50.6	
1008	26	78	21.76	6.62	2.244	57.0	70.8	52.3	
1012	30	90	21.74	6.63	2.249	59.5	70.2	53.1	
1015	33	99	21.75	6.62	2.250	60.0	70.2	54.4	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 31.681 Purge rate 3 gpm 3.3 min interv

Final meter reading 31.815

Number of container: 3 bottles w/ 1016

Duplicate sample 18BGMW14-302 3 bottles w/ 1038

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW15 | SAMPLE NO.: 18BGMW15-002

START (Date): 11/8/96 (Time): 1354 | END (Date): 11/8/96 (Time): 1435

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, mod breeze, 85°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 165.42 | FINAL DTW: 165.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TD~~ ~~DTW~~ VOLUME 5" - 0.93

Tubing ~~diam~~ radius Pump Depth 6" - 1.50

0.03125^2 X 214 x3.14 = 0.656 x 7.48 +0.06 ~~Gal./Csg Vol.~~ gal/ft x 3 Csg. Vol. = 14.9 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1358	~~4~~	~~1.88~~ 2	23.32	7.00	2.90	49.7	57.6	52.3	
1402	8	4	23.45	7.01	3.00	28.8	58.0	50.3	
1407	13	7	23.74	7.00	3.03	11.4	59.2	44.0	
1411	17	~~4~~ 9	24.21	6.98	3.06	4.9	60.7	40.4	
1415	21	11	24.47	6.97	3.09	2.5	61.3	38.6	
1419	25	13	24.60	6.96	3.11	2.4	61.7	38.0	
1423	29	15	24.72	6.95	3.12	1.9	62.0	37.3	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. Discharge tubing = 3/4" diam.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BGMW16 | SAMPLE NO.: 18BGMW16-002

START (Date): 11/14/96 (Time): 1112 | END (Date): 11/14/96 (Time): 1148

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Foggy 60°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 216.40 | FINAL DTW: 216.46

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

268 - 216.40 = 51.6 x 48.0 Gal./Csg Vol. x 3 Csg. Vol. = 144 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 250
1115	3	15	21.18	7.29	1.860	26.8	93.7	111.1	
1118	6	30	22.33	7.26	1.917	15.8	92.2	108.6	
1121	9	45	23.13	7.23	1.955	11.0	91.6	104.7	
1124	12	60	23.40	7.22	1.979	21.9	91.7	105.8	
1127	15	75	23.51	7.22	2.003	13.1	100.7	106.4	
1130	18	90	23.60	7.20	2.078	9.0	99.5	107.3	
1133	21	105	23.69	7.17	2.160	18.0	98.3	108.4	
1136	24	120	23.64	7.17	2.190	17.0	97.9	109.3	
1139	27	135	23.72	7.16	2.227	18.2	97.4	109.3	
1142	30	150	23.72	7.16	2.249	13.1	97.1	110.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides (✓)

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 31,377 Purge rate 5 gpm 3 min. interval.

Final meter reading: 31,563

Red hex wrench on site. Need 5.5" Cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW17 | SAMPLE NO.: 18BGMW17-002

START (Date): 11/8/96 (Time): 1035 | END (Date): 11/8/96 (Time): 1231

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Clear, calm, 90°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 138.46 | FINAL DTW: 138.76

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50				
260	- 138.46	= 121.54	x 113.03 Gal./Csg Vol.	x 3 Csg. Vol.	= 339.1 Gal.		

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % (mg/l)	REDOX (mV)	COMMENT
1047	12	100	23.59	6.94	1.34	153.5	70.9	-42.5	
1055	20	100	23.76	6.80	1.34	78.4	74.3	-41.7	
1103	28	150	23.82	6.76	1.34	74.6	74.6	-41.9	
1110	35	200	23.81	6.67	1.33	41.2	76.4	-42.1	Shut down to empty tank
1150	40	225	23.96	6.77	1.36	169.5	75.4	-25.2	Restarted @ 1145.
1155	45	250	23.98	6.81	1.36	59.2	76.3	-41.7	
1205	50	275	24.06	6.81	1.37	46.7	77.5	-41.4	
1210	55	300	24.09	6.80	1.36	30.1	78.8	-40.6	
1215	60	325	24.45	6.77	1.38	15.8	78.1	-37.3	
1220	65	350	24.36	6.76	1.38	19.0	78.3	-37.6	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW18 | SAMPLE NO.: 18BGMW18-002

START (Date): 1/9/97 (Time): 0951 | END (Date): 1/9/97 (Time): 1040

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear

FIELD PERSONNEL'S NAME(S): Mike Olyphant

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: — | ORIG. DTW: 129.91 | FINAL DTW: 129.91

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" 0.93 6" - 1.50				
186.7	-	129.91	=	56.79	x	37.48	Gal./Csg Vol.	x	3 Csg. Vol.	= 112 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 2 1/2 gpm

2 1/2 gpm.

ACTUAL TIME 0951	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
0953	2	10	20.37	7.40	1.56		111.1	93.4		
0957	6	20	20.12	7.40	1.55		107.0	100.1		
0959	8	25	22.60	7.26	1.56	7.4	101.7	75.5		
1002	11	32 1/2	23.31	7.25	1.57	6.5	98.3	70.6		
1006	14 min	42 1/2	23.40	7.23	1.57	5.8	95.5	68.7		
1010	18	52 1/2	23.44	7.25	1.58	6.6	96.0	68.8		
1015	23	65	23.61	7.26	1.59		92.8	70.1		
1023	31	85	23.73	7.25	1.58	[illegible]	99.4	75.0		
1031	39 min	105	23.78	7.23	1.58	6.[illegible]	94.2	78.8		
1033	41	110	23.85	7.23	1.58	6.6	92.0	78.9		
1035	43	115	23.84	7.23	1.58		91.3	79.0		

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump (X)

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( ) TPH - GAS

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( ) TPH - Diesel

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: LAST 3 readings are within acceptable parameters

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 BCMW 19A | SAMPLE NO.: 18BCMW19A-002

START (Date): 11/4/96 (Time): 1140 | END (Date): 11/4/96 (Time): 1252

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): SCOTT SCHRODDER, BRIAN TRUNK, PHILLIPS

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (at V. notch)

OVM READING: 0 | ORIG. DTW: 115.16 | FINAL DTW: 114.75

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD | ORIGINAL DTW | CASING VOLUME | 4" - 0.66 | 5" - 0.93 | 6" - 1.50

473 - 115.16 = 358 x 333 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 500 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8.7 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1146	6	45	24.47	7.37	1.222	1.6	40.7	194.4	Pump set at ~~200~~ 196 11/4
1153	13	97.5	24.03	7.25	1.216	0.8	41.6	199.9	
1201	21	169.5	24.71	7.31	1.230	0.6	70.6	201.3	
1207	27	223.5	25.37	7.26	1.254	1.9	67.0	199.1	DTW 138.6
1213	33	277.5	25.92	7.31	1.261	4.9	71.2	197.2	
1219	39	331.5	26.31	7.19	1.275	50.8	61.2	196.3	
1225	45	385.5	26.69	7.14	1.285	25.1	71.3	194.6	DTW 138.6
1231	51	439.5	26.30	7.04	1.278	19.3	63.9	189.1	
1237	57	493.5	26.46	6.94	1.279	8.3	63.3	185.4	DTW 138.32
1243	63	547.5	26.64	6.96	1.284	9.5	59.2	179.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: We'll sample well after 1.5 casing purged if monitoring parameters are stable

Initial meter reading 22,817.5 Purge rate 7.5 gal/min for the first 15 min

Purge rate 4 gpm for the rest of purging [illegible]

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW19B | SAMPLE NO.: 18BGMW19B-002

START (Date): 11/4/96 (Time): 1403 | END (Date): 11/4/96 (Time): 1505

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder Brian Trink Phillips

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (V-notch)

OVM READING: 0 | ORIG. DTW: 114.21 | FINAL DTW: 119.60

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

425 - 114.21 = 310.79 x 2.89 Gal./Csg Vol. x 1.5 Csg. Vol. = 434 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(pH)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1408	5	45	23.66	7.23	1.078	8.7	41.6	170.8	DTW 119.2
1413	10	90	23.65	7.23	1.070	40.4	50.2	169.4	Pump set at 146'
1418	15	135	23.66	7.25	1.075	101.8	49.6	167.8	
1423	20	180	24.67	7.27	1.078	1.3	49.2	165.2	
1428	25	225	24.98	7.28	1.075	1.9	52.7	163.9	
1433	30	270	25.03	7.26	1.075	32.4	69.2	158.6	
1438	35	315	25.78	7.17	1.076	10.7	62.5	146.6	
1443	40	360	25.75	7.19	1.078	10.2	72.9	136.7	
1448	45	405	25.65	7.16	1.088	8.9	73.6	135.4	DTW 119.60
1453	50	450	25.70	7.15	1.105	4.9	72.0	135.2	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 23,400.7 Purge rate 4 gpm Sample interval

Final meter reading: 23,920.3

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BCMW19C | SAMPLE NO.: 18BCMW19C-002

START (Date): 11/5/98 (Time): 0832 | END (Date): 11/5/98 (Time): 0957

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Cloudy ~55°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder, Brian Trink, Phillips

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 99.96 | FINAL DTW: 100.83

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50				
282 -	99.96 =	182.04 x	169.3 Gal./Csg Vol.	x	1.5 ~~3~~ Csg. Vol.	=	254 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8.9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
									Pump set at ~~127~~ 126' BT 11/5
0835	3	27	21.82	7.02	1.804	48.4	74.9	-88.7	DTW unable to confirm
0838	6	54	22.55	7.09	1.820	63.7	73.3	-88.9	
0841	9	81	22.79	7.09	1.839	102.3	73.4	-88.3	
0844	12	108	23.00	7.08	1.844	178.8	73.1	-89.0	
0847	15	135	23.28	7.08	1.849	6.7	72.3	-88.9	Pump weight slightly moved from meter. Turbidity
									Pump lowered to ~~127~~ 168' BT 11/5
0930	66	161.4	23.94	6.98	1.952	16.0	71.3	-89.8	DTW 114'
0943	71	205.9	24.15	7.01	1.943	16.3	66.9	-89.8	Drawdown = 1' per 5 sec
0946	74	231.8	24.27	7.01	1.937	13.9	65.6	-89.8	Purge rate 8.3 gpm
0949	77	258.2	24.37	7.01	1.952	8.9	64.7	-89.8	At 138' drawdown 33 sec per 1/10'

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: initial meter reading: 24.238' Pump rate 8 gpm 2 min interval 1st 0850

Final meter reading: 29.538

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW19D | SAMPLE NO.: 18BGMW19D-002

START (Date): 11/4/96 (Time): 1558 | END (Date): 11/4/96 (Time): 1635

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder Brian Trink Phillip

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (V. notch)

OVM READING: 0 | ORIG. DTW: 91.52 | FINAL DTW: 91.58

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

175 - 91.52 = 83.48 x 77.6 Gal./Csg Vol. x 3 Csg. Vol. = 233 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9.6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT
1601	3	28.5	22.61	6.96	2.403	13.2	83.6	161.9	DTW 92.1 Pump set at 125'
1604	6	57.0	22.33	7.01	2.657	22.5	89.0	163.2	DTW 92.28
1607	9	85.5	22.26	7.03	2.715	1.1	89.7	164.6	
1610	12	114	22.25	7.03	2.725	1.6	88.0	165.5	
1613	15	142.5	22.28	7.03	2.724	9.7	87.1	166.9	
1616	18	171	22.36	7.04	2.720	1.4	89.0	167.4	
1619	21	199.5	22.24	7.03	2.729	6.3	87.0	169.0	
1622	24	228	22.27	7.04	2.725	0.7	87.4	169.4	
1625	27	256.5	22.30	7.04	2.730	19.5	91.1	170.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading = ~~23.933~~ 23.933 at 11/4 Purge rate: 9.5 gpm 2.5 min interval

Final meter reading: 24237

Westbay

Groundwater Sampling

18MCAS02-5-002

Field Data Sheet

Project MCAS EL TORO Location EL TORO Depth 375 Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. 5 Starting Time 1310 Finishing Time 1350

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.53 (End of Session) 119.78

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	129.70	✓	151.54	✓	✓	✓	129.63	1	
2	✓	✓	✓	✓	✓	✓	129.71	✓	151.58	✓	✓	✓	129.71	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1330	21.97	7.17	1.484	0.8	82.1	-198.1	N
1350	21.68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS02-~~3~~ 4 MO-002

Project MCAS El TORO Location El TORO Depth ~~495~~ 425 MO Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. MO ~~3~~ 4 Starting Time 1130 Finishing Time 1210

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.38 (End of Session) 119.53

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	151.60	✓	173.85	✓	✓	✓	151.63	1	
2	✓	✓	✓	✓	✓	✓	151.65	✓	173.92	✓					
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO % ~~(MG/L)~~	Redox (mV)	Air Bubbles (Y OR N)
1150	22.57	20	1.403	8.7	61.8	-191.5	X
1210	22.27	7.27	1.190	3.8	98.5	-173.3	X

Westbay

Groundwater Sampling

18MCAS02-3-002

Field Data Sheet

Project MCAS EI TORO Location EI TORO Depth 995 Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. 3 Starting Time 1220 Finishing Time 1305

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.53 (End of Session) 119.66

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	182.01	✓	201.53	✓	✓	✓	181.99	1	collected Rinsate 18MCAS02-3-502 AT 1225
2	✓	✓	✓	✓	✓	✓	181.98	✓	201.34	✓	✓	✓	181.97	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1235	22.32	7.34	1.932	0.5	94.5	-192.7	Y

Westbay

Groundwater Sampling

Field Data Sheet

18MCASOZ-2-002

Project MCAS El TORO Location El TORO Depth 555 Date 11/12/96

Drillhole No. MCASOZ Sampling Zone No. 2 Starting Time 1018 Finishing Time 1115

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.15 (End of Session) 119.38

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	208.18	✓	227.88	✓	✓	✓	208.21	1	
2	✓	✓	✓	✓	✓	✓	208.17	✓	227.69	✓	✓	✓	208.22	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1040	22.11	55	2.534	0.9	65.6	-174.4	X
1110	22.41	6.57	2.676	1.1	69.5	-182.7	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS02-1-002

Project MCAS EI TORO Location EI TORO Depth 625 Date 11/12/96

Drillhole No. 18MCAS02 Sampling Zone No. 1 Starting Time 0900 Finishing Time 1006

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 118.63 (End of Session) 119.15

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	238.71	✓	257.78	✓	✓	✓	238.83	1	
2	✓	✓	✓	✓	✓	✓	238.78	✓	254.07	✓	✓	✓	238.75	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	~~Temp (oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
0939	21.97	6.03	2.108	0.2	75.8	-154.3	Y

Westbay

Groundwater Sampling

18MCAS01-T-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 65' Date 11/18/96

Drillhole No. 18MCAS01 Sampling Zone No. 7 Starting Time 1420 Finishing Time 1500

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 113.39 (End of Session) 113.39

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	14.88	✓	30.95	✓	✓	✓	14.88	1	
2	✓	✓	✓	✓	✓	✓	14.86	✓	30.92	✓	✓	✓	14.86	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1435	19.93	7.36	1.491	2.2	105.7	-243.8	N
1500	19.86	.04	2.890	0.6	91.6	-243..	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS01-6-002

Project MCAS El Toro Location El Toro Depth 155 Date 11/18/96

Drillhole No. 18MCAS01 Sampling Zone No. 6 Starting Time 1310 Finishing Time 1400

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 113.23 (End of Session) 113.39

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	36.00	✓	69.32	✓	✓	✓	36.02	1	Replaced Arm
2	✓	✓	✓	✓	✓	✓	36.01	✓	69.31	✓	✓	✓	36.00	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1330	20.25	6.88	2.584	4.7	172.6	-179.3	N
1400	20.63	6.95	4.275	10.7	160.1	-186.3	N

Westbay

Groundwater Sampling

18MCAS01-5-002

Field Data Sheet

Project MCAS EL TORO Location EL TORO Depth 215 Date 11/18/96

Drillhole No. 18MCAS01 Sampling Zone No. 4 Starting Time 1200 Finishing Time 1300

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 113.12 (End of Session) 113.23

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	62.13	✓	92.28	✓	✓	✓	62.13	1	
2	✓	✓	✓	✓	✓	✓	62.12	✓	92.25	✓	✓	✓	62.10	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1215	20.82	6.94	1.730	3.9	139.4	-200.6	N
1250	20.48	.87	1.916	3.7	141.8	-206.3	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS01 -4-002

Project MCAS EL TORO Location EL TORO Depth 275 Date 11/18/96

Drillhole No. 18MCAS01 Sampling Zone No. 4 Starting Time 1045 Finishing Time 1130

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 113.00 (End of Session) 113.12

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	88.26	✓	109.72	✓	✓	✓	88.31	1	
2	✓	✓	✓	✓	✓	✓	88.26	✓	109.73	✓	✓	✓	88.25	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1100	21.01	7.09	1.070	1.3	134.7	-201.8	N
1130	20.93	7.20	1.102	3.4	141.9	-191.4	N

Westbay

Groundwater Sampling

18 MCAS01-3-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 335 Date 11/18/96

Drillhole No. 18MCAS01 Sampling Zone No. 3 Starting Time 0900 Finishing Time 1010

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 112.66 (End of Session) 113.00

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	114.50	✓	135.74	✓	✓	✓	114.49	1	
2	✓	✓	✓	✓	✓	✓	114.49	✓	135.74	✓	✓	✓	114.43	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(°F)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
0945	20.98	7.63	1.541	1.0	131.0	-169.2	N
1010	20.47	64	1.653	3.4	161.3	-178.3	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS01-2-002

Project MCAS El TORO Location El TORO Depth 455 Date 11/15/96

Drillhole No. 18MCAS01 Sampling Zone No. 2 Starting Time 1230 Finishing Time 1320

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 112.66 (End of Session) 112.78

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	166.62	✓	185.89	✓	✓	✓	166.58	1	2x40ml VOAs 1x16oz Nalgene - Gen Chem
2	✓	✓	✓	✓	✓	✓	166.67	✓	185.89	✓	✓	✓	166.65	1.415	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1250	20.97	6.54	0.907	2.6	130.3	-277.3	N
1315	20.20	6.62	1.505	1.5	157.3	-266.3	Y

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS01-1-002

Project MCAS El TORO Location El TORO Depth 545 Date 11/15/96

Drillhole No. 18MCAS01 Sampling Zone No. 1 Starting Time 1000 Finishing Time 1210

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 112.26 (End of Session) 112.66

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	205.69	✓	220.46	✓	✓	✓	205.69	1	# of sample bottles
2	✓	✓	✓	✓	✓	✓	205.67	✓	220.34	✓	✓	✓	205.69	1	2X40ml VOA vials
3															1X16oz Nalgene - General
4															chemistry.
5															Rinsate collected
6															at 1040 sample #
7															18MCAS01-1-502
8															
9															
10															
11															
12															

10/03/93

Total Volume : 7

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1132	19.79	5.85	0.142	1.3	177.9	-253.9	Y
1210	21.00	5.85	1.509	0.8	97.7	-276.3	Y

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 -009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 13DW540 | SAMPLE NO.: 13DW540-002

START (Date): 11/6/96 (Time): ~~0941 0901~~ ST 11/6 0944 | END (Date): 11/6/96 (Time): 1116

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~65°-70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder Brian Trail, Philippe

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 127.68 | FINAL DTW: 127.33

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
541	-	127.68	=	413.32	x	2.73	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 409 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5.4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 147'
11/6 ST ~~0949~~ 0950	6	45	24.62	8.38	0.764	24.2	28.3	-349.1	Well did not produce enough water to pump out. Lower pump to ~~207~~ 190' ST 11/6
0956	12	11/6 ST ~~98~~ 86.25	24.96	8.39	0.751	10.9	19.3	-356.0	Drawdown 1'/7sec at 165' purge rate remains 4gpm. Lower pump to 304
1003	19	126.75	25.39	8.42	0.735	13.4	15.5	-355.6	
1011	27	167.50 ~~166.75~~ ST 11/6	25.76	8.47	0.714	12.5	10.3	-356.7	
1019	35	207.5	26.13	7.73	0.816	46.7	16.0	-145.4	Purge rate stabilized at 5 gpm
1027	43	247.5	26.36	7.34	0.995	149.9	28.1	-85.6	
1035	51	287.5	26.54	7.28	1.029	317.5	31.8	-51.6	
1043	59	327.5	26.61	7.26	1.038	324.3	38.4	-41.2	
1051	67	367.5	26.65	7.25	1.054	249.6	44.6	-34.0	
1059	75	407.5	26.77	7.25	1.079	112.6	51.8	-35.8	
1107	83	447.5	26.83	7.25	1.080	97.3	54.2	-31.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading = 25,328 Purge rate ~~8.5 gpm~~ 7.5 gpm ST 11/6 -6 min interval

Final meter reading = 25,802 6.25 gpm @ 0953 7 min interval

5.25 gpm @ 0958 8 min interval

5.00 gpm @ 1006 8 min interval

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 DW 450 | SAMPLE NO.: 18DW450-002

START (Date): 11/5/96 (Time): 1328 | END (Date): 11/5/96 (Time): 1416

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~65°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder, Brian Trink, Philippi

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 128.40 | FINAL DTW: 128.30

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
454	-	128.40	=	325.6	x	215	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 322 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 146'
1332	4	34	23.85	8.05	0.750	25.2	16.4	-349.2	
1336	8	68	24.25	7.98	0.822	55.3	1.0	-364.9	
1340	12	102	24.42	7.98	0.822	17.8	0.6	-352.3	DTW 129.36
1344	16	136	24.72	7.98	0.816	31.2	0.5	-352.7	
1348	20	170	25.09	7.48	0.892	363.3	2.6	-262.5	DTW 129.38
1352	24	204	25.21	7.22	1.018	184.3	22.1	-197.5	
1356	28	238	25.22	7.20	1.079	45.3	28.0	-190.6	
1400	32	272	25.27	7.19	1.095	17.1	25.3	-182.0	
1404	36	306	25.55	7.17	1.159	235.2	63.0	-176.2	
1408	40	340	25.60	7.17	1.156	14.9	63.4	-173.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 24865 Purge rate 8.5 gpm 4 min interval

Final meter reading: 25274

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18DW350 | SAMPLE NO.: 18DW350.002

START (Date): 11/6/96 (Time): 1253 | END (Date): 11/6/96 (Time): 1340

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder, Brian Tinh, Philippe

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 124.79 | FINAL DTW: 124.93

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

350 - 124.79 = 225.21 x 1.49 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 223 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 147'
1257	4	24	24.48	7.89	0.745	19.1	39.9	-198.1	
1301	8	48	24.61	7.59	0.758	11.5	41.8	-195.5	
1305	12	72	24.84	7.33	0.769	13.8	39.3	-192.1	
1309	16	96	24.99	7.27	0.765	194.4	36.7	-186.9	
1313	20	120	25.14	7.20	0.762	53.7	34.8	-179.3	
1317	24	144	25.23	7.21	0.892	574.3	~~5.74~~ 36.1	-122.5	
1321	28	168	25.45	7.25	0.932	628.3	44.5	-100.0	
1325	32	192	25.56	7.25	0.945	319.2	45.9	-98.2	
1329	36	216	25.70	7.25	0.967	172.9	48.5	-96.5	
1333	40	240	26.03	7.23	0.972	404.2	49.2	-90.6	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 25,801 Purge rate 6 gpm 4 min interval

Final meter reading: 26,066

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 1EDW250 | SAMPLE NO.: 1EDW250-002

START (Date): 11/5/96 (Time): 1153 | END (Date): 11/5/96 (Time): 1231

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny - 65°F - 70°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder, Brian Trind, Phillipp

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 121.66 | FINAL DTW: 122.70

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

254 - 121.66 = 132.34 x 87.3 Gal./Csg Vol. x 3 Csg. Vol. = 262 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 146'
1156	3	27	23.88	8.00	0.869	31.6	28.4	-96.7	
1159	6	54	24.07	7.23	1.029	80.4	41.8	-94.9	DTW 125.6'
1202	9	81	24.22	7.17	1.187	51.3	89.9	-94.3	
1205	12	108	24.28	7.16	1.149	43.3	91.9	-93.8	
1208	15	135	24.33	7.14	1.133	36.9	92.9	-95.2	
1211	18	162	24.36	7.14	1.121	37.4	93.9	-94.7	
1214	21	189	24.36	7.13	1.110	48.0	95.3	-94.5	DTW 126.9'
1217	24	216	24.38	7.12	1.099	41.4	95.3	-96.3	
1220	27	243	24.38	7.12	1.103	19.6	94.9	-97.1	
1223	30	270	24.38	7.11	1.091	21.2	97.2	-96.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 24,536 Purge rate 9 gpm 3 min. interval

Final meter reading: 24,865

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 DW 135 | SAMPLE NO.: 18 DW 135.002

START (Date): 11/5/96 (Time): ~~1510~~ 1523 | END (Date): 11/5/96 (Time): 1545

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 60°F

FIELD PERSONNEL'S NAME(S): Scott Schroeder Brian Trink Phillips

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 117.45 | FINAL DTW: 117.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

135 - 117.45 = 17.55 x 11.6 Gal./Csg Vol. x 3 Csg. Vol. = 35 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: ~~2.5~~ 1.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 125'
1525	2	5	23.93	6.91	3.042	459.9	79.5	-157.3	Very silty
1527	4	10	23.95	6.90	3.029	742.9	76.5	-156.5	
1528	5	12.5	24.16	6.90	3.006	42.2	72.7	-156.0	
1529	6	15	24.34	6.90	3.041	41.7	70.9	-155.7	
1530	7	17.5	24.46	6.90	3.035	208.1	69.6	-155.3	
1531	8	20	24.52	6.89	3.028	261.0	69.2	-154.7	
1532	9	22.5	24.56	6.89	3.045	296.3	69.1	-154.4	
1533	10	25	24.99	6.89	3.061	177.4	68.1	-154.3	
1534	11	27.5	24.47	6.88	3.057	75.3	67.1	-154.1	
1535	12	30	24.47	6.88	3.052	77.0	66.9	-154.1	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 25,269 Purge rate ~~2.8~~ 3 gpm 11/5/96 1 min interval

Final meter reading: 25328

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW101- | SAMPLE NO.: 18BGMW101-002

START (Date): 11/14/96 (Time): 1645 | END (Date): 11/14/96 (Time): 1655

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Overcast, calm, 65°F

FIELD PERSONNEL'S NAME(S):

REFERENCE POINT OF DEPTH MEASUREMENT:

OVM READING: — | ORIG. DTW: 80.40 | FINAL DTW: 80.54

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

135 - 80.40 = 54.6 x 0.66 Gal./Csg Vol. x 3 Csg. Vol. = 108.1 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (~~mg/l~~ %)	REDOX (mV)	COMMENT
1646	1	8	22.70	6.70	1.74	128.7	98.6	114.2	
1648	3	24	22.66	6.71	1.99	115.3	92.7	113.1	
1649	4	32	22.67	6.73	2.90	65.0	92.2	112.0	
1651	6	48	22.66	6.77	2.90	56.7	92.0	111.2	
1652	7	56	22.72	6.79	2.91	43.8	92.1	109.7	
1654	9	72	22.85	6.81	2.93	39.7	92.3	108.0	
1655	10	80	22.86	6.81	2.93	35.7	92.1	104.9	
1657	12	96	22.87	6.82	2.94	32.1	91.9	102.6	
1658	13	102	22.87	6.83	2.94	28.9	91.5	100.4	
1659	14	110	22.88	6.83	2.94	26.4	91.4	99.2	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Collected dup. sample # 18BGMW101-302

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 18BGMW24 | SAMPLE NO.: 18BGMW24-002

START (Date): 11/26/96 (Time): 1035 | END (Date): 11/26/96 (Time): 1100

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, Strong N. breeze, 75°F

FIELD PERSONNEL'S NAME(S): S Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 37.08 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED WELL TD~~ Tubing radius	~~ORIGINAL DTW~~ Pump depth	~~CASING~~ VOLUME	4" - 0.66 5" - 0.93 6" - 1.50

0.0325² x 63 x3.14 = 0.19 x 7.48 ~~Gal./Csg. Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 4.5 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1037	2	1	20.81	7.45	1.37	14.9	100*	98.2	N	
1039	4	2	20.76	7.51	1.39	19.1	100	97.6	N	
1041	6	3	21.29	7.54	1.40	7.2	100	95.1	N	
1043	8	4	21.52	7.54	1.41	8.0	100	94.1	N	
1045	10	5	21.68	7.53	1.42	9.2	64.0	92.7	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" tubing

Collected duplicate sample # 18BGMW24-302

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18BGMW23 | SAMPLE NO.: 18BGMW23-002

START (Date): 12/5/96 (Time): 1050 | END (Date): 12/5/96 (Time): 1111

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 29.39 | FINAL DTW: 29.73

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
109	-	29.39	=	79.61	x	52.5	Gal./Csg Vol.	x	3 Csg. Vol.	= 158 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9.75 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (~~°F~~) (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) (mg/l)	REDOX (mV)	COMMENT Pump set at 60'
1052	2	19.5	21.44	7.28	1.677	339.1	97.8	161.2	
1053	3	29.25	21.39	7.26	1.682	324.0	97.2	162.0	
1055	5	48.75	21.31	7.20	1.680	213.8	96.6	160.2	
1056	6	58.5	21.33	7.17	1.697	167.4	99.4	156.6	
1058	8	78.0	21.44	7.16	1.711	93.3	99.6	145.7	
1059	9	87.75	21.43	7.15	1.718	129.4	99.6	142.3	
1101	11	107.25	21.45	7.15	1.736	22.9	99.6	138.4	
1103	13	126.75	21.37	7.14	1.750	32.1	98.3	139.2	
1104	14	136.5	21.38	7.14	1.750	131.3	97.8	139.9	
1107	17	165.75	21.37	7.13	1.771	120.1	97.7	142.7	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 39.085 Purge rate: 9.75 gpm 1.6 min. interval

Final meter reading: 39.290 Need lock and 4" cap

Number of container: 3 bottles

Duplicate sample 18BGMW23-302 collected at 1130 (3 bottles)

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Non-dedicated Pump ( ) Dedicated Pump (X)

PURGING LOG

WELL NO.: 18BGMW22 | SAMPLE NO.: 18BGMW22-002

START (Date): 11/14/96 (Time): 1749 | END (Date): 11/14/96 (Time): 1910

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (X) | WEATHER: Dark, calm, 60°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of Sounding tube

OVM READING: — | ORIG. DTW: 232.58 | FINAL DTW: 232.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

292 - 232.58 = 59.42 x 0.93 Gal./Csg Vol. x 3 Csg. Vol. = 165.78 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 2 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT
1757	8	16	23.35	7.25	1.86	903.6	68.7	57.8	
1805	16	32	23.99	7.31	1.84	425.1	68.2	69.6	
1813	24	48	24.10	7.33	1.85	103.3	70.0	68.1	
1821	32	64	24.23	7.33	1.85	35.2	77.7	67.2	
1829	40	80	24.31	7.34	1.85	23.0	79.6	66.9	
1837	48	96	24.37	7.34	1.85	14.5	80.8	68.1	
1844	55	120	24.44	7.34	1.85	17.6	81.0	52.5	
1851	62	140	24.42	7.35	1.85	11.9	82.5	72.3	
1857	68	155	24.49	7.36	1.85	7.4	85.2	68.4	
1903	74	170	24.49	7.36	1.85	8.1	85.1	72.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

TPH-Gasoline (X) TPH-Diesel (X) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 18BGMW19E | SAMPLE NO.: 18BGMW19E-002

START (Date): 11/20/96 (Time): 1632 | END (Date): 11/20/96 (Time): 1705

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Overcast, lt. breeze, 65°F

FIELD PERSONNEL'S NAME(S): S. Martin

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: ——— | ORIG. DTW: 391.86 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~WELL TD~~ Tubing radius | ~~ORIGINAL~~ ~~DTW~~ Pump depth | ~~CASING~~ VOLUME | 4" - 0.66 / 5" - 0.93 / 6" - 1.50

0.03125^2 x 137 x3.14 = 0.42 x 7.48 gal/ft ~~Gal./Csg Vol.~~ +0.06 x 3 Csg. Vol. = 9.61 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (~~NTU~~)	DISSOLVED OXYGEN (~~mg/l~~ %)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1634	2	1	21.72	6.82	2.99	11.9	89.0	165	N	
1636	4	2	21.82	6.82	3.00	10.9	27.0	170	N	
1638	6	3	21.84	6.82	3.00	11.0	58.5	165	N	
1640	8	4	21.92	6.82	3.02	11.5	80.3	160	N	
1642	10	5	22.15	6.82	3.00	12.2	73.0	150	N	
1644	12	6	22.64	6.83	3.01	12.1	83.6	145	N	
1646	14	7	22.85	6.84	3.01	11.9	89.3	135	N	
1648	16	8	22.86	6.84	3.00	11.9	89.3	130	N	
1650	18	9	22.91	6.83	3.08	11.9	64.2	130	N	
1652	20	10	22.94	6.82	3.02	12.1	64.1	125	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( ) TAlg ad (X)

Unfiltered Metals ( ) Pesticides (X) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" tubing.

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS02-6-002

Project MCAS EL TORO Location EL TORO Depth 205 Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. 6 Starting Time 1410 Finishing Time 1445

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.78 (End of Session) 119.53

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	55.76	✓	84.80	✓	✓	✓	55.76	1	
2	✓	✓	✓	✓	✓	✓	55.90	✓	84.81	✓	✓	✓	55.90	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MGL)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1420	21.43	7.48	0.817	1.7	73.8	-204.6	N
1445	21.20	7.42	1.6 22	1.8	73.4	-207.8	N

Westbay

Groundwater Sampling

18 MCAS02-7-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 135 Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. 7 Starting Time 1500 Finishing Time 1545

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.53 (End of Session) 119.63

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	25.45	✓	57.48	✓	✓	✓	25.42	1	
2	✓	✓	✓	✓	✓	✓	25.47	✓	57.52	✓	✓	✓	25.46	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : _____

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1515	21.19	7.6	1.720	10.9	67.1	-203.1	N

Westbay

Groundwater Sampling
Field Data Sheet

18MCAS02-8-002

Project MCAS El Toro Location El TORO Depth 45 Date 11/12/96

Drillhole No. MCAS02 Sampling Zone No. 8 Starting Time 1600 Finishing Time 1645

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 119.63 (End of Session) 119.63

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	14.83	✓	18.99	✓	✓	✓	14.83	1	
2	✓	✓	✓	✓	✓	✓	14.82	✓	18.96	✓	✓	✓	14.83	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1615	20.85	7.20	1.789	65.5	58.5	-210.1	N
1645	20.86	7.33	1.8201	65.1	[illegible]	[illegible]	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS03-1-002

Project MCAS El TORO Location El TORO Depth 495 Date 11/6/96

Drillhole No. 18MCAS03 Sampling Zone No. zone 1 Starting Time 0930 Finishing Time 1112

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 85.82 (End of Session) 86.32

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	196.04	✓	190.96	✓	✓	✓	196.06	1	
2	✓	✓	✓	✓	✓	✓	196.02	✓	190.99	✓	✓	✓	196.06	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp (~~oF~~) C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO (MG/L) %	Redox (mV)	Air Bubbles (Y OR N)
1020	17.03	7.9	0.527	3.7	96.9	-18.1	N
[illegible]	21.[illegible]	[illegible]	[illegible]	[illegible]	87.[illegible]	-[illegible]	N

Westbay

Groundwater Sampling

18MCAS03-Z-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 425 Date 11/6/96

Drillhole No. 18MCAS03 Sampling Zone No. Zone 2 Starting Time 1128 Finishing Time 1240

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 86.32 (End of Session) 86.79

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	165.49	✓	159.71	✓	✓	✓	165.44	1	
2	✓	✓	✓	✓	✓	✓	165.42	✓	159.74	✓	✓	✓	165.40	1	
3	✓	✓	✓	✓	✓	✓	165.38	✓	159.73	✓	✓	✓	165.42	1	
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp (°F) C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO (MG/L) %	Redox (mV)	Air Bubbles (Y OR N)
1215	21.97	7.28	0.944	184.4	79.4	-18.0	N
1235	22.36	7.44	0.953	196.1	97.3	-19.6	N

Westbay

Groundwater Sampling

18MCAS03-3-002

Field Data Sheet

Project MCAS EI TORO Location EI TORO Depth 345 Date 11/6/96

Drillhole No. MCAS03 Sampling Zone No. Zone 3 Starting Time 1300 Finishing Time 1415

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 86.79 (End of Session) 87.21

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	130.40	✓	126.30	✓	✓	130.37	→	1	
2	✓	✓	✓	✓	✓	✓	130.37	✓	126.28	✓	✓	✓	130.36	1	
3	✓	✓	✓	✓	✓	✓	130.35	✓	126.28	✓	✓	✓	130.36	1	
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1324	23.44	7.0	1.062	253.8	112.3	-22.9	N
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Westbay

Groundwater Sampling

18MCAS03-4-002

Field Data Sheet

Project MCAS EI TORO Location EI TORO Depth 225 Date 11/6/96

Drillhole No: MCAS03 Sampling Zone No. Zone 4 Starting Time 1435 Finishing Time 1525

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 87.21 (End of Session) ~~1525~~ 87.45

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	78.18	✓	78.69	✓	✓	✓	78.11	1	
2	✓	✓	✓	✓	✓	✓	78.13	✓	78.64	✓	✓	✓	78.06	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(eF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(mg/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1434	22.11	7.11	0.700	262.9	104.1	-191.5	N
1520	22.51	7.26	0.322	205.8	106.1	-191.5	N

Westbay

Groundwater Sampling

18MCAS03-5-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 165 Date 11/6/96

Drillhole No. MCAS03 Sampling Zone No. Zone 5 Starting Time 1525 Finishing Time 1615

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 87.45 (End of Session) 87.67

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	51.99	✓	54.70	✓	✓	✓	51.99	1	
2	✓	✓	✓	✓	✓	✓	51.90	✓	54.69	✓	✓	✓	51.89	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(°F)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1545	22.90	98	1.947	284.3	80.9	-199.5	N
1610	[illegible]	[illegible]	[illegible]	[illegible]	89.[illegible]	-192.[illegible]	N

Westbay

Groundwater Sampling

18MCAS03-6-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 89. Date 11/6/96

Drillhole No. MCAS03 Sampling Zone No. Zone 6 Starting Time 1630 Finishing Time 1710

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 87.67 (End of Session) 87.69

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	19.30	✓	22.06	✓	✓	—	19.33	1	
2	✓	✓	✓	✓	✓	✓	19.30	✓	22.06	✓	✓	✓		.75	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 1.75

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp (~~oF~~ C)	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO (~~MG/L~~ %)	Redox (mV)	Air Bubbles (Y OR N)
1645	20.82	6.18	1.259	207.8	55.0	-183.6	N
1705	20.20	6.97	2.346	198.7	57.8	-198.4	N

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18MCAS04 | SAMPLE NO.: 18MCAS04.002

START (Date): 11/19/96 (Time): 0839 | END (Date): 11/19/96 (Time): 0929

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Foggy Cowcloudy ~65°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 26.24 | FINAL DTW: 28.65

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

275 - 26.24 = 248.76 x 164.2 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 246 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 50'
0843	4	22	18.91	7.37	1.635	18.2	40.5	-171.0	
0848	9	49.5	19.25	6.97	1.866	18.3	39.9	-101.9	
0852	13	71.5	19.37	6.79	2.040	16.1	40.8	-40.0	
0857	18	99.0	~~18~~ 19.84	6.82	1.927	47.4	41.4	-25.4	
0901	22	121.0	19.95	6.82	1.918	21.7	43.0	-21.0	
0906	27	148.5	20.02	6.81	1.919	8.6	46.1	-16.4	
0910	31	170.5	20.09	6.81	1.930	15.5	47.4	-14.1	
0915	36	198.0	20.15	6.81	1.936	6.5	48.6	-11.3	
0919	40	220.0	20.20	6.81	1.936	5.7	49.2	-9.4	
0924	45	247.5	20.24	6.80	1.940	3.7	50.3	-8.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32,524 Purge rate: 5.5 gpm 4.5 min interval

Final meter reading: 32,791

Number of container: 4 bottles collected

Need 4.5" Cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18MCAS05A | SAMPLE NO.: 18MCAS05A-002

START (Date): 11/20/96 (Time): 1406 | END (Date): 11/20/96 (Time): 1505

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Cloudy ~65°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 31.60 | FINAL DTW: 36.84

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

140 - 31.60 = 108.4 x 71.5 Gal./Csg Vol. x 3 Csg. Vol. = 215 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.s.)	COND. (umhos/m)	TURB. (NTs)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 60'
1408	2	19	21.64	8.93	1026	21.0	47.3	0.2	9.5gpm
1413	7	41.5	21.15	8.45	0.997	11.3	28.9	-49.5	4.5gpm
1418	12	64.0	21.58	8.75	1.014	4.5	20.0	-92.9	
1423	17	86.5	21.53	7.84	1.156	3.0	18.8	-163.5	
1428	22	109.0	21.46	7.56	1.205	2.8	19.7	-132.5	
1433	27	131.5	21.40	7.47	1.253	2.1	24.0	-126.6	
1438	32	154.0	21.37	7.44	1.289	0.9	26.8	-122.0	
1443	37	176.5	21.59	7.40	1.327	0.7	30.6	-114.9	
1448	42	199.0	21.54	7.38	1.328	0.9	30.5	-114.8	
1453	47	221.5	21.57	7.37	1.337	4.9	32.1	-112.8	
1458	52	244.0	21.58	7.35	1.345	4.6	32.9	-111.2	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 34,010 Purge rate: 9.5 gpm 2.3 min interval

Final meter reading: 34,272 4.5 gpm 4.8 min

Number of container: 4 bottles collected

Duplicate sample: 18MCAS05A-302 4 containers at 1520

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 MCAS 06 | SAMPLE NO.: 18 MCAS 06 - 002

START (Date): 11/19/96 (Time): 1020 | END (Date): 11/19/96 (Time): 1051

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Foggy low clouds ~65°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 20.62 | FINAL DTW: 21.24

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
285	-	20.62	=	264.38	x	.175	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 262 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.s.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 100%
1023	3	33	21.43	8.37	1.168	69.3	36.4	-235.5	
1025	5	55	21.76	7.82	1.259	51.9	30.1	-167.4	
1028	8	88	21.98	6.96	1.553	29.3	26.2	-71.8	
1030	10	110	22.04	6.96	1.575	22.0	25.3	-64.8	
1033	13	143	22.08	6.95	1.602	7.1	22.9	-55.0	
1035	15	165	22.10	6.95	1.601	3.2	22.3	-52.1	
1038	18	198	22.09	6.95	1.601	1.6	21.8	-48.2	
1040	20	220	21.97	6.96	1.593	5.4	21.4	-48.0	
1043	23	153	22.01	6.95	1.597	3.0	22.3	-46.2	
1045	25	275	22.00	6.95	1.595	4.3	22.3	-46.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 32,791 Purge rate: 11 gpm 2.5 min interval

Final meter reading: 33,195

Number of container: 4 bottles collected

Need 4.5" cap

Westbay

18MCAS071-002

Groundwater Sampling
Field Data Sheet

Project MCAS EI TORO Location EI TORO Depth 1085 Date 11/11/96

Drillhole No. MCAS07 Sampling Zone No. 1 Starting Time 0930 Finishing Time 1100

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 135.42 (End of Session) 136.35

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	429.05	✓	461.75	✓	✓	✓	429.17	1	
2	✓	✓	✓	✓	✓	✓	429.10	✓	459.77	✓	✓	✓	429.00	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1015	22.07	6.40	1.428	0.5	64.1	-195.3	X
1100	22.73	6.29	2.855	0.2	54.9	-202.8	X

Westbay

Groundwater Sampling

18MCAS07-2-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 985 Date 11/11/96

Drillhole No. 18MCAS07 Sampling Zone No. 2 Starting Time 1110 Finishing Time 1210

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 136.35 (End of Session) 136.50

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	385.46	✓	417.75	✓	✓	✓	385.46	1	
2	✓	✓	✓	✓	✓	✓	385.47	✓	416.73	✓	✓	✓	385.43	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

Micro bubbles were observed in the VOA vials - Repoured sample but the bubbles [illegible]

TIME	Temp ~~(s.?)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1137	23.01	29	3.104	0.1	78.5	-195.7	Y
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS07-3-002

Project MCAS EI TORO Location EI TORO Depth 915' Date 11/11/96

Drillhole No. MCAS07 Sampling Zone No. 3 Starting Time 1225 Finishing Time 1326

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 136.50 (End of Session) 136.81

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	355.05	✓	386.13	✓	✓	✓	354.93	1	
2	✓	✓	✓	✓	✓	✓	355.06	✓	386.08	✓	✓	✓	354.89	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1253	23.37	6.82	2.989	1.5	55.1	-215.5	✓
1320	23.06	6.65	2.985	0.5	41.9	-202.4	✓

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS07-4-002

Project MCAS EI TORO Location EI TORO Depth 805 Date 11/11/96

Drillhole No. MCAS07 Sampling Zone No. 4 Starting Time 1335 Finishing Time 1425

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 136.81 (End of Session) 137.02

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	307.12	✓	338.67	✓	✓	✓	307.02	1	
2	✓	✓	✓	✓	✓	✓	307.02		338.57	✓	✓	✓	307.00	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1357	23.26	9.1	2.902	0.6	61.4	-216.0	Y
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS07-5-002

Project MCAS EI TORO Location EI TORO Depth 515 Date 11/11/96

Drillhole No. MCAS07 Sampling Zone No. 5 Starting Time 1440 Finishing Time 1445

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 137.02 (End of Session) 137.13

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	180.83	✓	202.29	✓	✓	✓	180.88	1	
2	✓	✓	✓	✓	✓	✓	180.88	✓	202.32	✓	✓	✓	180.88	1	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(cF)~~ C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1435	22.89	6.64	2.716	3.1	66.2	-216.7	Y
1445	22.70	6.53	2.778	0.3	47.5	-218.6	Y

Westbay

Groundwater Sampling

18MCAS07-6-002

Field Data Sheet

Project MCAS El TORO Location El TORO Depth 445 Date 11/20/96

Drillhole No. 18MCAS07 Sampling Zone No. 4 Starting Time 1320 Finishing Time 1410

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 136.90 (End of Session) 137.30

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	150.40	✓	173.46	✓	✓	✓	150.44	1	2X40ml VOA
2	✓	✓	✓	✓	✓	✓	150.43	✓	173.36	✓	✓	✓	150.39	1	1X16oz NAlgene
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 2

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.u.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1350	22.59	7.20	1.015	0.5	78.7	43.2	N
1410	22.63	.23	1.369	0.5	76.2	38.1	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS07-7-002

Project MCAS El Toro Location El Toro Depth 355 Date 11/20/96

Drillhole No. 18MCAS07 Sampling Zone No. 3 Starting Time 1420 Finishing Time 1505

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 137.30 (End of Session) 137.50

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Comments
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure In MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure In MP ( )	Volume Retrieved (liters)	
1	✓	✓	✓	✓	✓	✓	111.19	✓	140.44	✓	✓	✓	111.24	1	2X40ml VOA
2	✓	✓	✓	✓	✓	✓	111.27	✓	140.27	✓	✓	✓	111.27	1	1X16oz NAlgene
3	✓	✓	✓	✓	✓	✓	111.25	✓	140.23	✓	✓	✓	111.19	1	1X1l Amber glass SVOC
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1435	22.07	7.45	1.202	2.0	90.1	61.8	N
1505	22.21	7.20	1.105	0.5	95.3	86.2	N

Westbay

Groundwater Sampling

Field Data Sheet

18MCAS07-8-002

Project MCAS EL TORO Location EL TORO Depth 195 Date 11/20/96

Drillhole No. 18MCAS07 Sampling Zone No. 2 Starting Time 1515 Finishing Time 1610

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 137.50 (End of Session) 137.58

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	41.59	✓	91.16	✓	✓	✓	41.62	1	2X40ml VOA
2	✓	✓	✓	✓	✓	✓	41.58	✓	91.15	✓	✓	✓	41.59	1	1X16oz NAlgene - Gen Chem.
3	✓	✓	✓	✓	✓	✓	41.56	✓	91.17	✓	✓	✓	41.59	1	1X1l amber glass - SVOC
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(oF)~~ °C	PH (s.a.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1525	21.66	7.52	0.739	0.6	90.8	80.1	N
1610	21.77	.44	1,300	0.5	91.3	73.8	N

Westbay

Groundwater Sampling

18MCAS07-9-002

Field Data Sheet

Project MCAS El Toro Location El Toro Depth 95 Date 11/20/96

Drillhole No. _____ Sampling Zone No. _____ Starting Time 1625 Finishing Time 1720

Technicians Mike Oliphant

Water Level Inside MP Casing (Beginning of Session) 137.58 (End of Session) 137.58

Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan

Run No.	Surface Function Checks: Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Position Sampler: Deactivate Set Arm Locate Port	Sample Collection Checks: Pressure in MP ( )	Activate	Pressure Through Port ( )	Open Valve	Close Valve	Deactivate	Pressure in MP ( )	Volume Retrieved (liters)	Comments
1	✓	✓	✓	✓	✓	✓	14.89	✓	49.15	✓	✓	✓	14.93	1	2X40ml VOA
2	✓	✓	✓	✓	✓	✓	14.88	✓	49.17	✓	✓	✓	14.91	1	1X16oz NAlgene - Gen Chem
3	✓	✓	✓	✓	✓	✓	14.88	✓	49.15	✓	✓	✓	14.91	1	1X 1l glass amber - SVOC
4															
5															
6															
7															
8															
9															
10															
11															
12															

10/03/93

Total Volume : 3

Field Determinations (Appearance, pH, S.C., etc.)

TIME	Temp ~~(°F)~~ °C	PH (s.u.)	COND (mS/cm)	TURB (NTU)	DO ~~(MG/L)~~ %	Redox (mV)	Air Bubbles (Y OR N)
1635	20.68	7.16	2.106	0.2	95.6	94.6	N
1720	20.53	7.27	3.860	0.5	83.9	93.8	N

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18MCAS08 | SAMPLE NO.: 18MCAS08-002

START (Date): 11/20/96 (Time): 1605 | END (Date): 11/20/96 (Time): ET 11/25 ~~1656~~ 1651

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Cloudy ~ 65°F

FIELD PERSONNEL'S NAME(S): Brian Trish (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 100.74 | FINAL DTW: 103.50

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
435	-	100.74	=	334.26	x	220 G	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 331 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 150'
1609	4	32	22.57	8.22	2.081	5.5	20.4	-261.2	
1613	8	64	22.82	8.15	2.084	5.0	12.3	-265.3	
1617	12	96	23.30	8.02	2.109	3.8	4.7	-244.2	
1621	16	128	23.63	7.95	2.130	3.0	2.6	-231.5	
1626	21	168	23.84	8.01	2.148	1.2	0.7	-248.2	
1630	25	200	24.02	8.04	2.154	0.9	0.1	-254.9	
1634	29	232	24.16	8.06	2.164	0.3	-0.3	-257.4	
1638	33	264	24.17	8.07	2.167	0.3	-0.5	-258.1	
1642	37	296	24.21	8.05	2.167	0.3	-0.5	-255.7	
1647	42	336	24.21	8.07	2.169	0.4	-0.6	-255.4	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 34,271 Purge rate: 8 gpm 4.1 min interval

Final meter reading: 34,644

Number of container: 4 bottles collected

Need 4.5" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18MCAS09 | SAMPLE NO.: 18MCAS09-002

START (Date): 11/19/96 (Time): 1414 | END (Date): 11/19/96 (Time): 1502

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Low clouds ~65°F

FIELD PERSONNEL'S NAME(S): Brian Tomb (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 34.44 | FINAL DTW: 47.56

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
450	-	34.44	=	415.56	x	274.3 Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	=	411 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.s.)	COND. (umhos/m)	TURB. (NTs)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 100'
1418	4	38.0	21.73	8.92	0.619	13.9	59.8	-182.8	
1422	8	76.0	22.17	8.90	0.622	13.7	48.0	-198.2	
1427	13	123.5	22.68	8.93	0.620	15.9	36.9	-213.1	
1431	17	161.5	23.26	8.98	0.619	13.3	25.5	-224.2	
1435	21	199.5	23.66	8.98	0.635	4.2	20.6	-228.8	
1440	26	247.0	24.12	7.28	1.154	37.0	15.7	-110.9	
1444	30	285.0	24.31	7.23	1.186	42.6	13.6	-107.4	
1448	34	323.0	24.38	7.23	1.194	29.6	11.8	-106.9	
1453	39	370.5	24.52	7.22	1.201	29.2	9.8	-106.0	
1458	44	418.0	24.54	7.21	1.207	7.0	8.3	-106.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 33 444 Purge rate: 9.5 gpm 4.3 min interval

Final meter reading: 33,896

Number of container: 4 bottles collected

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18MCAS10 | SAMPLE NO.: 18MCAS10-002

START (Date): 11/19/96 (Time): 1230 | END (Date): 11/19/96 (Time): 1311

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Foggy, low clouds ~65°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 43.12 | FINAL DTW: 47.82

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 3"

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
389	-	43.12	=	345.88	x	228.3	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 342 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 100'
1233	3	28.5	20.96	8.22	1.229	36.9	56.9	-204.8	
1237	7	66.5	22.04	8.29	1.230	8.4	44.1	-269.7	
1240	10	95.0	22.39	8.31	1.247	14.9	34.1	-282.4	
1244	14	133.0	22.76	8.29	1.283	3.7	26.0	-283.5	
1247	17	161.5	23.02	7.26	1.794	16.4	22.6	-155.1	
1251	21	199.5	23.29	7.16	1.896	26.7	19.4	-122.4	
1254	24	228.0	23.48	7.17	1.905	39.0	17.0	-115.9	
1258	28	266.0	23.55	7.16	1.907	19.0	12.3	-112.5	
1302	32	~~294.5~~ 304.0	23.67	7.16	1.897	11.4	6.8	-110.0	
1306	36	342.0	23.66	7.17	1.890	6.4	8.5	-110.5	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 33,105 Purge rate: 9.5 gpm 36 min interval

Final meter reading: 33,444

Number of container: 4 bottles collected

Need 4.5" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18PS1 | SAMPLE NO.: 18PS1 - 002

START (Date): 11/25/96 (Time): 1106 | END (Date): 11/25/96 (Time): 1155

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Mekau (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 86.60 | FINAL DTW: 87.42

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

122 - 86.60 = 35.40 x 2.34 Gal./Csg Vol. x 3 Csg. Vol. = 70 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 2 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 100'
1108	2	13.0	23.18	6.54	2.971	35.5	306.7	245.0	
1109	3	19.5	23.00	6.66	2.960	32.6	329.0	325.0	
1110	4	26.0	23.18	6.71	2.964	39.4	331.5	310.0	Purge rate dropped to 50.5 gp.
1115	9	28.5	23.86	6.73	3.006	94.9	371.0	280.0	lower pump to 120'
~~1118~~ 1123	17	54.0	23.83	6.51	3.020	39.0	443.5	285.0	Purge rate dropped to < 2 gpm
1128	22	55.0	23.78	6.64	3.015	47.2	430.9	270.0	
1132	26	57.0	23.70	6.69	3.006	45.7	359.6	270.0	
1137	31	61.0	23.67	6.61	3.003	34.9	260.0	270.0	
1140	34	66.0	23.75	6.61	3.000	56.4	222.7	280.0	
1145	39	71.0	23.77	6.62	3.020	64.0	214.6	290.0	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial Meter reading: 35,628 Purge rate: 8.5 gpm 1.0 min. interval

Final meter reading: 35,807 8.5 gpm 0.8 min

Number of container: 3 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18 PS2 | SAMPLE NO.: 18 PS2 - 002

START (Date): 11/25/96 (Time): 11/25 1337 1340 | END (Date): 11/25/96 (Time): 1400

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 75°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 99.34 | FINAL DTW: 108.44

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
133	-	99.34	=	33.66	x	22.2	Gal./Csg Vol.	x	3 Csg. Vol.	= 67. Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5.6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.s.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 120'
1341	1	8	23.63	6.59	2.611	53.4	~~524~~ 503.5	230.0	
1342	2	16	23.45	6.70	2.575	35.7	295.6	235.0	
1343	3	24	23.42	6.72	2.637	29.8	307.4	240.0	
1344	4	32	23.44	6.73	2.664	27.4	324.3	245.0	
1345	5	40	23.44	6.75	2.680	27.7	322.5	245.0	
1346	6	48	23.48	6.77	2.693	56.2	331.1	250.0	Clear water
1347	7	56	23.89	6.78	2.744	36.8	330.2	270.0	Purge rate dropped to 3.5 gpm
1350	10	66.5	23.99	6.78	2.749	30.7	378.7	255.0	
1352	12	73.5	24.02	6.79	2.757	26.9	364.5	260.0	
1353	13	77.0	24.05	6.79	2.759	28.3	356.4	260.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial Meter reading: 35,708 Purge rate: 8 gpm 08 min. interv

Final meter reading: 35 781

Number of container: 4 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

.L NO.: 18PS3 | SAMPLE NO.: 18PS3-002

START (Date): 1/8/97 (Time): 1410 | END (Date): 1/8/97 (Time): 1425

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear

FIELD PERSONNEL'S NAME(S): Mike Oliphant

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: — | ORIG. DTW: 83' | FINAL DTW: 83'

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 5" - 0.93 6" - 1.50				
122	83	= 39'	x 25.75 Gal./Csg Vol.	x 3 Csg. Vol.	= 77 Gal.		

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 2 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % (~~mg/l~~)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1410	0	0	—	—	—	—	—	—	—	
1412	2	4	23.00	6.99	1.161	290	98.5	93.6	Y	cloudy
1414	2	8	23.05	6.98	1.168	260.1	94.0	92.0	Y	"
1416	2	12	23.09	6.99	1.159	219.1	94.6	91.5	Y	"
1418	2	16	23.07	6.98	1.154	42	93.1	92.3	Y	"
1420	2	20	23.07	6.98	1.151	213	95.9	92.5	Y	clear
1422	2	24	23.09	6.98	1.173	84	99.8	93.2	Y	"
1424	2	28	23.10	6.98	1.169	96.2	96.4	93.7	Y	"

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump (X)

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )
Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )
Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

MENT: 300 gallons was purge by OHM from 1205-1245
Last 3 readings within acceptable parameters

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18PS4 | SAMPLE NO.: 18PS4-002

START (Date): 12/5/96 (Time): 1257 | END (Date): 12/5/96 (Time): 1312

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Cloudy ~55°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 76.30 | FINAL DTW: 76.35

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

119 - 76.30 = 42.7 x 28.2 Gal./Csg Vol. x 3 Csg. Vol. = 85 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (°F) (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) (mg/l)	REDOX (mV)	COMMENT Pump set at 100'
1258	1	8	19.97	7.48	1.589	21.2	96.9	178.8	
1259	2	16	20.61	7.29	1.740	24.0	95.9	180.6	
1300	3	24	20.95	7.11	1.761	16.0	94.7	179.9	
1301	4	32	21.22	7.08	1.775	19.6	93.4	179.2	
	5	40	21.40	7.05	1.797	22.5	91.6	179.9	
1303	6	48	21.80	7.01	1.866	16.9	90.3	178.9	
1304	7	56	21.95	7.00	1.872	19.9	89.9	178.8	
1305	8	64	21.97	6.98	1.896	16.5	89.5	178.8	
1306	9	72	22.05	6.98	1.910	11.6	88.5	177.8	
1307	11	88	22.10	6.97	1.950	10.7	87.7	177.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 39,290 Purge rate: 8 gpm 1.0 min. interval

Final meter reading: 39,423

Number of container: 3 bottles

Duplicate sample 18PS4-302 collected at (3 bottles)

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - C - 9 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18PS5 | SAMPLE NO.: 18PS5 - 002

START (Date): [illegible] (Time): 0915 | END (Date): [illegible] (Time): 0932

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink, Philip McKay

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 87.88 | FINAL DTW: 87.98

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
127	-	87.88	=	39.12	x	25.8	Gal./Csg Vol.	x	3 Csg. Vol. =	78 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 104'
0917	2	18	23.07	6.88	1.739	38.0	104.0	101.0	
0918	3	27	22.75	6.83	1.720	43.0	103.8	~~103.8~~ 101.5 BT 11/11	
0919	4	36	22.53	6.89	1.699	36.3	103.6	101.6	
0920	5	45	22.56	6.89	1.695	28.3	103.4	101.6	
0921	6	54	22.54	6.90	1.680	23.0	103.2	101.5	
0922	7	63	22.53	6.92	1.677	23.7	103.2	101.7	
0923	8	72	22.52	6.90	1.674	23.6	103.1	101.8	
0924	9	81	22.50	6.91	1.672	18.9	103.1	101.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial water reading - 29.074 Purge rate - 9 gpm 1 min interval

Final water reading - 29.212

Triple sample for QC

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18PS6 | SAMPLE NO.: 18PS6 - 002

START (Date): 11/25/96 (Time): 0946 | END (Date): 11/25/96 (Time): 1011

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Mekay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 111.12 | FINAL DTW: 113.30

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		
				4" - 0.66		
				5" - 0.93		
				6" - 1.50		
151	-	111.12	=	39.88	x	26.3 Gal./Csg Vol. x 3 Csg. Vol. = 79 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 6.9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 130'
0950	2	16	24.00	6.98	1.955	86.7	225.5	225.0	
0951	3	24	23.77	6.98	1.932	47.3	224.4	230.0	
0952	4	32	23.72	6.92	2.026	129.3	242.8	235.0	Purge rate dropped to 4.5 gpm
0956	8	50	23.93	6.89	2.258	52.6	270.1	235.0	
0957	9	54.5	24.04	6.89	2.272	32.6	268.8	240.0	
0959	11	63.5	24.11	6.87	2.277	32.1	267.2	240.0	
1000	12	69.0	24.16	6.87	2.286	27.3	262.9	240.0	
1002	14	77.0	24.21	6.86	2.286	40.7	254.5	240.0	
1003	15	81.5	24.27	6.85	2.284	57.5	205.7	240.0	
1004	16	86.0	24.31	6.84	2.282	59.2	147.2	240.0	Sample collected at 1005

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial Meter reading: 35,518 Purge rate: 8 gpm 1 min. interv

Final meter reading: 35,628 " 1.5 min

Number of container: 3 bottles

Duplicate sample 18PS6-302 collected at 1025 (3 bottles)

Need new well lock

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18P57 | SAMPLE NO.: 18P57-002

START (Date): [illegible] (Time): 1335 | END (Date): [illegible] (Time): 1355

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~80°F

FIELD PERSONNEL'S NAME(S): Brian Trink (D.M.) Phillip McKee (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 87.12 | FINAL DTW: 86.14

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50					
127	- 87.12	= 39.88	x	26	Gal./Csg Vol.	x	3 Csg. Vol.	= 79 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7.0 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 104'
1338	3	27	25.15	7.14	1409	39.5	102.2	26.8	
1339	4	36	24.77	7.14	1440	29.6	102.0	27.9	6 gpm
1340	5	42	24.60	7.13	1459	40.7	102.5	29.0	
1341	6	48	24.62	7.12	1465	36.5	102.6	29.7	
1342	7	54	24.57	7.12	1469	28.9	102.7	30.5	
1343	8	60	24.56	7.12	1470	30.8	102.7	30.9	
1344	9	66	24.53	7.12	1473	30.5	102.8	31.5	
1345	10	72	24.51	7.12	1474	15.3	102.6	32.1	
1346	11	78	24.47	7.12	1474	11.2	102.5	32.6	
1347	12	84	24.54	7.12	1474	8.2	102.5	32.1	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides (✓) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading 28.975 Purge rate 9 gpm [illegible]

Final meter reading 29.075 6 gpm

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump ( ) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18PS8 - | SAMPLE NO.: 18PS8-002

START (Date): 11/25/96 (Time): 0846 | END (Date): 11/25/96 (Time): 0907

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 103.32 | FINAL DTW: 104.46

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
146	-	103.32	=	42.68	x	2.8	Gal./Csg Vol.	x	3 Csg. Vol.	= 85 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7.4 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.s.)	COND. (umhos/m)	TURB. (NTs)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 120'
0849	3	27	20.05	6.85	1.339	122.7	258.6	210	
0850	4	36	20.33	6.94	1.379	55.7	295.2	215	
0851	5	45	20.78	6.79	1.413	57.3	295.6	215	
0852	6	54	21.09	6.79	1.495	56.2	309.0	225	Purge rate dropped to 5gpm
0855	8.9	69	21.47	6.80	1.594	34.5	321.5	225	
0856	~~9~~ 10	~~69~~ 74	21.71	6.80	1.642	30.6	328.4	225	
0857	~~10~~ 11	~~74~~ 79	21.93	6.78	1.661	27.9	333.2	225	
0900	14	94	22.41	6.76	1.697	21.6	339.2	230	
0901	15	99	22.53	6.76	1.700	19.9	340.2	230	
0902	16	104	22.66	6.76	1.702	16.1	342.1	230	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial Meter reading: 35,400 Purge rate: 9 gpm 0.9 min. interv

Final meter reading: 35,518 5 gpm 1.0 min

Number of container: 4 bottles

No lock on well case

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 004 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18RW1 | SAMPLE NO.: 18RW1-002

START (Date): [illegible] (Time): [illegible] | END (Date): [illegible] (Time): 0921

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: [illegible] Hook 70°F

FIELD PERSONNEL'S NAME(S): [illegible] Water [illegible] water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 93.80 | FINAL DTW: 93.42

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66
			5" - 0.93
			6" - 1.50

504 - 93.80 = 410.2 x 382 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 572 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 125'
0820	6	57	23.03	8.34	1.043	1.2	27.2	-307.0	
0826	12	114	23.08	8.34	1.046	1.9	24.4	-311.2	
0832	18	201	23.39	8.34	1.054	1.7	11.1	-330.0	
0838	24	258	23.41	8.36	1.061	3.1	3.2	-337.7	
0844	30	315	24.45	8.38	1.068	1.8	-2.6	-346.5	
0850	36	372	24.78	8.29	1.074	3.5	-8.0	-343.6	
0856	42	429	25.12	7.19	1.270	690.7	15.7	-84.7	Cloudy water
0902	48	486	25.18	7.14	1.324	-853.1	23.2	-57.7	very cloudy water
0908	54	543	25.35	7.12	1.366	733.8	33.4	-34.4	
0914	60	600	25.50	7.12	1.374	203.4	39.7	-34.2	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides (✓)

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial water reading 27.838 [illegible] 7.5 gpm 6 min interval

Final water reading 28.412

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 004 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 18RW2 | SAMPLE NO.: 18RW2-002

START (Date): 8/96 (Time): 1103 | END (Date): 8/96 (Time): 1226

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: [illegible]

FIELD PERSONNEL'S NAME(S): Brian Trink (OPM) Philip McKean (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 78.04 | FINAL DTW: 79.84

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

475 - 78.04 = 396.96 x 369 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 554 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9.0 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT
									Pump set at 104
1109	0	34	24.27	8.47	0.797	112.4	48.6	-105.4	
1115	12	108	24.27	8.43	0.789	101.3	43.4	-88.2	
1121	18	162	24.39	8.11	0.795	123.4	33.7	-89.3	Purge rate dropped to 4.5 gpm
									Turn off pump & lower to 145'
1138	35	192	23.97	8.52	0.786	83.0	27.1	-219.1	Purge rate ~~[illegible]~~ [illegible]
1143	40	242	24.13	8.30	0.794	67.7	21.0	-196.7	
1149	46	302	24.56	7.17	1.053	104.8	44.4	-34.7	9 gpm
1154	51	~~[illegible]~~ 347	24.90	7.16	1.055	105.4	52.1	-21.3	
1200	57	401	24.91	7.16	1.122	127.1	69.6	-10.7	
1206	63	455	25.00	7.15	1.121	123.4	70.9	-5.2	
1212	69	509	25.06	7.15	1.120	110.9	71.7	-2.2	
1218	75	563	25.15	7.14	1.122	105.1	72.2	2.1	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading = 28442 Purge rate = 9 gpm 6 min interval

Final meter reading = 28977 [illegible] 6 min interval

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 0058 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 19DBMW54 | SAMPLE NO.: 19DBMW54-002

START (Date): 12/3/96 (Time): 1135 | END (Date): 12/3/96 (Time): 1154

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~ 70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vinnel

OVM READING: 0 | ORIG. DTW: 140.61 | FINAL DTW: 142.0

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

186 - 140.61 = 45.39 x 30 Gal./Csg Vol. x 3 Csg. Vol. = 90 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 160'
1137	2	14	25.84	7.09	1.460	911.0	91.2	84.7	
1138	3	21	24.64	7.09	1.409	125.7	90.8	91.1	
1139	4	28	24.29	7.09	1.402	132.9	92.9	92.4	
1140	5	35	24.07	7.08	1.400	157.8	92.8	93.9	
1141	6	42	24.02	7.08	1.407	190.1	92.1	98.7	
1143	8	56	24.30	7.08	1.435	80.3	91.7	105.7	
1144	9	63	24.37	7.06	1.441	92.3	92.3	108.8	
1145	10	70	24.43	7.03	1.433	97.2	92.7	83.5	
1147	12	84	24.53	7.03	1.439	150.0	92.7	79.2	
1148	13	91	24.55	7.04	1.440	191.8	92.8	82.6	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 37.440 Purge rate = 7 gpm 1.3 min. interval

Final meter reading: 37.562

Number of container: 8 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 -004 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 19DGMW85 | SAMPLE NO.: 19DGMW85-002

START (Date): 12/3/96 (Time): 1021 | END (Date): 12/3/96 (Time): 1042

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vnotch

OVM READING: 0 | ORIG. DTW: 139.48 | FINAL DTW: 142.60

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
188	-	139.48	=	48.52	x	32.0	Gal./Csg Vol.	x	3 Csg. Vol. =	96 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 160'
1023	2	15	24.26	7.31	1.439	344.2	90.5	107.5	
1024	3	22.5	24.24	7.29	1.457	387.6	90.6	103.7	
1025	4	30	24.20	7.19	1.464	348.6	90.2	105.2	
1026	5	37.5	23.98	7.12	1.496	78.4	89.3	70.5	
1027	6	45	24.07	7.12	1.510	-945.1	87.5	60.2	
1029	8	60	24.19	7.08	1.517	-932.6	85.9	58.2	
1030	9	67.5	24.23	7.09	1.527	-933.7	85.4	62.5	
1031	10	75.0	24.32	7.12	1.550	-903.0	84.6	68.0	
1033	12	90	24.70	7.14	1.590	-773.7	82.1	91.0	
1034	13	97.5	24.74	7.14	1.588	-795.3	82.2	91.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 37.335 Purge rate = 7.5 gpm 13 min. interv

Final meter reading: 37.340

Number of container: 2 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 19DGMW86 | SAMPLE NO.: 19DGMW86.002

START (Date): 12/3/96 (Time): 0910 | END (Date): 12/3/96 (Time): ~~0936~~ at 12/3 0932

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Vnotch

OVM READING: 0 | ORIG. DTW: 148.52 | FINAL DTW: 178.48

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

203 - 148.52 = 54.48 x 36.0 Gal./Csg Vol. x 3 Csg. Vol. = 108 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 7 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 175'
0911	1	7	17.60	7.65	1.579	606.6	86.6	133.4	
0913	3	21	19.19	7.63	1.660	330.4	83.0	121.0	
0914	4	28	19.95	7.58	1.599	222.9	79.5	85.0	
0916	6	42	20.27	7.52	1.670	148.8	77.1	60.9	
0917	7	49	20.45	7.48	1.680	209.1	76.5	55.9	
0919	9	63	20.54	7.42	1.705	103.3	73.9	52.6	
0920	10	70	20.77	7.40	1.715	103.6	72.4	52.7	
0922	12	84	20.89	7.36	1.725	114.7	69.7	57.9	
0923	13	91	20.99	7.34	1.729	156.2	68.2	50.6	
0926	16	112	21.04	7.33	1.730	162.4	65.4	53.1	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 37,270 Purge rate: 7 gpm 1.5 min. interval

Final meter reading: 37,335 Duplicate sample 19DGMW86.302 at 0950 (3 bottles)

Number of container: 3 bottles ACE sample 19DGMW86.902 at 0850 6 bottles

Need 4" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 19UG-MW35-002 | SAMPLE NO.: 19UG-MW35-002

START (Date): 11/21/96 (Time): 1600 | END (Date): 11/21/96 (Time): 1635

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Raining hard, calm, 60°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sandy tub

OVM READING: | ORIG. DTW: 15N30 | FINAL DTW:

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

~~MEASURED~~ ~~WELL TD~~ Tubing radius ~~ORIGINAL~~ ~~DTW~~ Pump depth ~~CASING~~ VOLUME 4" - 0.66 5" - 0.93 6" - 1.50

0.03125² x 181 x3.14 = 056 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 12.6 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles observed? (yes/no)	COMMENT
1602	2	1	23.38	6.60	0.00	345.6	58.6	108.8	N	
1606	6	3	23.55	6.66	0.23	315.8	62.4	100.1	N	
1608	8	4	23.90	6.67	0.024	289.7	66.3	95.8	N	
1610	10	5	23.24	7.40	0.01	273.1	75.1	109.1	N	
1612	12	6	23.77	6.66	0.00	215.3	77.3	102.3	N	
1614	14	7	23.02	6.65	0.0	181.4	79.2	101.4	N	
1616	16	8	24.01	6.66	0.02	173.2	77.4	92.3	N	
1618	18	9	24.69	6.67	0.02	167.9	75.5	88.6	N	
1620	20	10	24.70	6.67	0.01	157.4	74.9	86.2	N	
1622	22	11	24.71	6.66	0.03	162.3	76.3	84.2		
1624	24	12	24.70	6.65	0.03	165.7	77.9	81.5		

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters (X)

COMMENT:

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 20DBMW55 | SAMPLE NO.: 20DBMW55-002

START (Date): 11/14/96 (Time): 1448 | END (Date): 11/14/96 (Time): 1516

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Hazy fog ~58°F

FIELD PERSONNEL'S NAME(S): Brian Tink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Unotch

OVM READING: 0 | ORIG. DTW: 179.60 | FINAL DTW: 179.86

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		(4" - 0.66) / 5" - 0.93 / 6" - 1.50				
232	-	179.60	=	52.4	x	3.46	Gal./Csg Vol.	x	3 Csg. Vol.	= 104 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 5.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 210'
1450	2	11	21.31	7.52	2.678	528.3	40.6	72.4	
1452	4	22	21.67	7.51	2.697	420.7	41.7	70.7	
1454	6	33	22.00	7.54	2.718	324.4	44.5	68.7	
1456	8	44	22.07	7.56	2.734	272.7	44.2	66.9	
1458	10	55	22.11	7.57	2.746	197.8	45.6	65.3	Residual water
1500	12	66	22.07	7.57	2.755	191.6	48.3	64.8	
1502	14	77	22.98	7.55	2.869	241.2	31.8	64.4	
1504	16	88	23.75	7.55	2.895	208.7	32.4	63.6	
1506	18	99	23.92	7.54	2.925	194.5	28.2	62.6	
1508	20	110	23.91	7.53	2.931	189.7	27.0	60.2	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 31,655 Purge rate 5.5 gpm 1.9 min. interval.

Final meter reading: 31,680

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump ( ) Dedicated Pump (✓)

PURGING LOG

WELL NO.: 20DBMW88 | SAMPLE NO.: 20DBMW88-002

START (Date): 11/25/96 (Time): 1515 | END (Date): 11/25/96 (Time): 1600

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, calm, 80°F

FIELD PERSONNEL'S NAME(S): S. Marthis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 182.84 | FINAL DTW: 183.04

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~ ~~ORIGINAL~~ ~~CASING~~ 4" - 0.66

~~WELL TD~~ Tubing radius ~~DTW~~ Pump depth VOLUME 5" - 0.93

6" - 1.50

0.03125^2 x 223 x3.14 = 0.68 x 7.48 ~~Gal./Csg Vol.~~ ft +0.06 x 3 Csg. Vol. = 15.52 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (~~mg/l~~ %)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1517	2	1	23.27	6.87	1.76	168.6	49.9	111.5	N	
1521	6	3	23.94	7.25	1.76	112.7	24.1	104.4	N	
1523	8	4	24.23	7.34	1.78	169.2	15.2	92.0	N	
1527	12	6	24.39	7.34	1.79	301.4	10.3	88.6	N	
1529	14	7	24.59	7.34	1.80	396.2	8.9	80.1	N	
1533	18	9	25.16	7.35	1.85	447.4	6.1	54.6	N	
1535	20	10	25.44	7.33	1.89	285.1	8.7	45.3	N	
1539	24	12	25.48	7.33	1.93	242.7	11.0	41.9	N	
1541	26	13	25.63	7.34	1.94	149.6	13.1	36.7	N	
1545	30	15	25.80	7.34	1.95	135.0	14.9	31.4	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals ( )

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Collected duplicate sample 20DBMW88-302.

Low flow purge, 3/4" discharge tubing.

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 20UGMW36 | SAMPLE NO.: 20UGMW36-002

START (Date): 11/14/96 (Time): 1311 | END (Date): 11/14/96 (Time): 1331

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Hazy fog ~59°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 185.84 | FINAL DTW: 188.08

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
228	-	185.84	=	42.16	x	27.8	Gal./Csg Vol.	x	3 Csg. Vol. =	84 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 6 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 210'
1314	3	18	23.90	7.29	3.330	57.4	85.4	100.1	
1315	4	24	24.03	7.29	3.345	150.3	85.1	99.9	
1316	5	30	24.25	7.29	3.377	147.8	83.7	99.4	
1317	6	36	24.34	7.29	3.414	135.2	75.2	98.2	
1319	8	48	24.38	7.27	3.434	67.4	73.8	95.3	
1320	9	54	24.42	7.27	3.447	50.5	73.1	91.3	
1321	10	60	24.55	7.29	3.460	29.9	74.6	80.3	
1322	11	66	24.56	7.29	3.469	31.4	75.0	74.9	
1323	12	72	24.58	7.28	3.477	29.7	75.1	69.9	
1325	14	84	24.59	7.23	3.502	17.5	76.8	54.5	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline (✓) TPH-Diesel (✓) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 31,563 Purge rate 6 gpm 1.4 min. interval.

Final meter reading: 31,655

Need 4.5" cap

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 21DBMW5C | SAMPLE NO.: 21DBMW5E C02

START (Date): 11/13/96 (Time): 1137 | END (Date): 11/13/96 (Time): 1207

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM), Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC V notch

OVM READING: 0 | ORIG. DTW: 89.76 | FINAL DTW: 89.68

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓) 2"

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

137 - 89.76 = 47.24 x 31.2 Gal./Csg Vol. x 3 Csg. Vol. = 94 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 3.75 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 100'
1142	5	18.75	23.53	6.92	1.269	18.7	98.6	97.8	
1144	7	26.25	23.56	6.92	1.263	16.9	99.0	89.5	DTW 90.96
1146	9	33.75	23.48	6.92	1.263	16.5	100.3	87.5	
1148	11	41.25	23.49	6.92	1.265	7.9	101.1	85.7	
1150	13	48.75	23.57	6.92	1.265	7.7	102.1	83.6	
1153	16	60.0	23.66	6.92	1.269	3.7	103.1	80.0	DTW 91.0
1156	19	71.25	23.67	6.92	1.268	2.0	103.9	77.7	
1159	21	78.75	23.63	6.92	1.267	2.3	104.5	75.2	
1201	24	89.50	23.59	6.92	1.268	2.4	105.1	75.3	DTW 91.04
1203	26	97.0	23.57	6.92	1.271	1.4	105.4	76.7	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 30.734 Purge rate 3.75 gpm 2.5 min interval

Final meter reading: 30.838

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 | TEAM: Westbay ( ) 2" Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 2/06MW90 | SAMPLE NO.: 2/06MW90-002

START (Date): 11/26/96 (Time): 1317 | END (Date): 11/26/96 (Time): 1345

WELL CASING DIAMETER: 2" ( ) 4" (X) 5" ( ) | WEATHER: Clear, mod. N breeze, 80°F

FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: Top of sounding tube

OVM READING: — | ORIG. DTW: 89.78 | FINAL DTW: 89.72

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (X)

~~MEASURED~~	~~ORIGINAL~~	~~CASING~~	4" - 0.68
~~WELL TD~~ Tubing radius	~~DTW~~ Pump depth	VOLUME	5" - 0.93
			6" - 1.50

0.03125² x 125 x 3.14 = 0.38 x 7.48 ~~Gal./Csg Vol.~~ gal/ft +0.06 x 3 Csg. Vol. = 8.78 Gal.

PURGE WATER CONTAINERIZED? (YES) | AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (oF)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	Air Bubbles Observed? (yes/no)	COMMENT
1319	2	1	22.95	7.05	1.72	126.1	36.6	115.4	N	
1321	4	2	22.78	7.09	1.70	93.6	40.9	110.6	N	
1323	6	3	22.77	7.07	1.70	101.2	48.1	98.0	N	
1325	8	4	23.01	7.03	1.71	117.1	52.5	88.7	N	
1327	10	5	23.25	7.01	1.71	127.3	57.7	82.0	N	
1329	12	6	23.38	6.98	1.72	118.7	65.2	69.4	N	
1331	14	7	23.61	6.98	1.73	123.0	68.6	62.4	N	
1333	16	8	23.65	6.97	1.73	98.1	70.4	65.4	N	
1335	18	9	23.63	6.97	1.73	89.0	70.8	64.9	N	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Westbay ( ) Portable Pump ( )

LAB ANALYSES: VOA (X) SVOA ( ) Filtered Metals ( )

Unfiltered Metals ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (X) Treatability Parameters ( )

COMMENT: Low flow purge. 3/4" tubing

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 21UGMW37- | SAMPLE NO.: 21UGMW37-002

START (Date): 11/11/96 (Time): 1303 | END (Date): 11/11/96 (Time): 1320

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER:

FIELD PERSONNEL'S NAME(S): Brian Trank, Philip Melay

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 90.78 | FINAL DTW: 90.90

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

135 - 90.78 = 44.22 x 29.2 Gal./Csg Vol. x 3 Csg. Vol. = 88 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN ~~(mg/l)~~ %	REDOX (mV)	COMMENT Pump set at 104
1305	2	18	24.25	7.04	1.541	593.4	70.8	24.4	
1307	4	36	24.13	7.04	1.534	702.1	69.9	25.5	
1308	5	45	24.19	7.04	1.534	-896.5	70.1	31.3	
1309	6	54	24.23	7.05	1.531	906.5	73.4	36.9	
1310	7	63	24.37	7.04	1.535	805.6	79.3	42.9	
1311	8	72	24.57	7.03	1.536	664.0	81.5	46.2	
1312	9	81	24.76	7.02	1.539	570.1	82.4	47.8	
1313	10	90	24.83	7.01	1.539	590.3	83.2	49.2	
1314	11	99	24.91	7.01	1.540	534.0	84.0	50.9	
1315	12	108	24.96	7.01	1.540	473.8	84.4	51.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters ( )

COMMENT: Initial meter reading: 29.597 Purge rate 9 gpm 1 min interval

Final meter reading 29.721

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 22DBMW47. - | SAMPLE NO.: 22DBMW47-002

START (Date): 12/2/96 (Time): 1310 | END (Date): 12/2/96 (Time): 1330

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Mckay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (Vnoick)

OVM READING: 0 | ORIG. DTW: 113.50 | FINAL DTW: 113.58

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
161	-	113.50	=	47.5	x	31.35	Gal./Csg Vol.	x	3 Csg. Vol. =	94 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(°F)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 140'
1311	1	8	23.25	7.06	1.735	25.3	94.5	159.3	
1312	2	16	23.45	7.04	1.780	31.9	93.3	147.5	
1313	3	24	23.57	7.03	1.814	33.4	92.8	139.9	
1314	4	32	23.71	7.02	1.822	95.7	92.4	133.5	
1316	6	49	23.74	7.02	1.815	36.5	92.5	125.9	
1317	7	56	23.72	7.02	1.812	14.9	94.3	125.5	
1318	8	64	23.70	7.02	1.809	21.1	96.0	125.5	
1319	9	72	23.69	7.01	1.809	15.4	95.7	125.3	
1320	10	80	23.69	7.01	1.807	13.4	95.1	125.2	
1322	12	96	23.70	7.01	1.805	15.0	95.0	125.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA (✓) Filtered Metals ( )

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 36,572 Purge rate: 8 gpm 1.2 min. interval

Final meter reading: 36,767

9 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 24NEW1 | SAMPLE NO.: 24NEW1-002

START (Date): 12/2/96 (Time): 1412 | END (Date): 12/2/96 (Time): 1445

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER:

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (Black mark)

OVM READING: 0 | ORIG. DTW: 117.10 | FINAL DTW: 118.03

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
250	-	117.10	=	132.9	x	123 G	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 185 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.s.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 146
1415	3	24	25.96	7.28	1.407	14.1	89.9	164.7	
1417	5	40	25.16	7.19	1.373	232.1	83.7	164.3	
1419	7	56	24.95	7.17	1.362	220.3	82.5	154.3	
1421	9	72	24.83	7.13	1.355	245.1	78.8	158.5	
1423	11	88	24.78	7.11	1.360	123.4	77.2	144.5	
1426	14	112	24.77	7.06	1.394	195.6	75.5	103.8	
1428	16	128	24.74	7.05	1.411	129.4	75.9	101.3	
1430	18	144	24.80	7.04	1.421	83.9	76.7	101.2	
1433	21	168	24.76	7.03	1.426	42.5	78.5	104.8	
1436	24	192	24.78	7.02	1.442	38.7	79.3	106.5	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 36,787 Purge rate: 8 gpm 2.3 min. interval

Final meter reading: 37,037

10 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 29NEW9 | SAMPLE NO.: 29NEW9-002

START (Date): 12/3/96 (Time): 1655 | END (Date): 12/3/96 (Time): 1617

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER:

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 109.25 | FINAL DTW: 111.43

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	
			4" - 0.66
			5" - 0.93
			6" - 1.50

154 - 109.25 = 44.75 x 30 Gal./Csg Vol. x 3 Csg. Vol. = 90 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 130'
1558	3	19.5	23.82	7.01	1.730	-687.7	86.0	81.9	
1559	4	26.0	23.80	7.03	1.728	-687.8	86.1	77.5	
1600	5	32.5	23.78	7.05	1.722	849.1	86.1	74.3	
1602	7	45.5	23.83	7.07	1.715	595.9	86.7	77.8	
1603	8	52	23.84	7.07	1.711	966.8	86.4	80.9	
1604	9	58.5	23.83	7.07	1.710	90.7	86.2	83.8	
1605	10	65	23.87	7.07	1.705	~~86~~ 493.3	86.3	87.6	
1607	12	78	23.89	7.05	1.707	*31.9	86.0	50.1	
1608	13	84.5	23.83	7.02	1.728	772.9	85.6	54.0	
1609	14	91	23.85	7.03	1.726	729.4	85.6	56.7	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump ( )

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading 37,887 Purge rate: 6.5 gpm 1.4 min interval

Final meter reading 38,020

10 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 24 NEW 5 | SAMPLE NO.: 24 NEW 5 -002

START (Date): 12/2/96 (Time): 1050 | END (Date): 12/2/96 (Time): 1125

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Hakey (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC

OVM READING: 0 | ORIG. DTW: 112.96 | FINAL DTW: 113.50

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD	ORIGINAL DTW	CASING VOLUME	4" - 0.66 / 5" - 0.93 / 6" - 1.50

255 - 112.96 = 142.04 x 132 Gal./Csg Vol. x ~~3~~ 1.5 Csg. Vol. = 198 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (C)	pH (s.u.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN (mg/l)	REDOX (mV)	COMMENT Pump set at 150'
1052	2	17	25.66	8.56	1.204	~~143~~ 6.5	91.7	136.3	
1054	4	34	24.57	8.54	1.159	5.3	89.7	137.2	
1057	7	59.5	24.42	8.52	1.164	5.0	88.4	138.4	
1059	9	76.5	24.50	87.76	1.212	92.0	87.0	159.4	
1101	11	93.5	24.51	7.40	1.238	157.3	87.2	177.9	
1104	14	119	24.56	7.17	1.288	125.9	88.2	150.7	
1106	16	136	24.59	7.14	1.320	101.0	89.0	153.4	
1108	18	153	24.65	7.14	1.350	135.0	91.2	135.9	
1111	21	178.5	24.66	7.14	1.349	18.4	93.1	132.8	
1114	24	~~195~~ 204	24.67	7.13	1.350	19.2	94.6	132.8	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 36,281 Purge rate: 8.5 gpm 2.3 min. interv

Final meter reading: 36,572

10 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 24NEW6 | SAMPLE NO.: 24NEW6 - 002

START (Date): 12/2/96 (Time): 0913 | END (Date): 12/2/96 (Time): 0951

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" (✓) | WEATHER: Sunny ~70F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip Mckay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC black mark

OVM READING: 0 | ORIG. DTW: 82.82 | FINAL DTW: 99.50

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
190	-	82.82	=	107.18	x	99.7	Gal./Csg Vol.	x	~~3~~ 1.5 Csg. Vol.	= 150 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 9 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTa)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 100'
0915	2	18	25.61	7.32	0.004	160.3	72.6	157.0	lower pump to 150'
0925	12	27	23.72	7.55	0.012	203.5	41.8	142.7	
0927	14	45	23.61	7.61	1.267	156.9	30.8	137.1	
0928	15	54	23.69	7.60	1.264	113.8	32.2	131.8	
0930	17	72	23.65	7.59	1.260	105.1	33.0	128.3	
0932	19	90	23.69	7.48	1.256	93.8	37.4	127.6	
0933	20	99	23.68	7.45	1.255	89.4	38.9	128.6	
0935	22	108	23.72	7.42	1.255	89.3	39.7	129.9	
0936	23	117	23.80	7.38	1.256	82.1	43.4	133.0	
0938	25	135	23.88	7.36	1.257	84.1	44.6	134.2	
0940	27	153	23.89	7.38	1.258	87.6	48.2	135.6	

Air Entrainment Survey ( ) Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 36.093 Purge rate: 9 gpm 1.6 min. interval

Final meter reading: 36.281

10 bottles

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 - 009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump (

PURGING LOG

WELL NO.: 24 NEW 7 | SAMPLE NO.: 24 NEW 7 - 002

START (Date): 12/3/96 (Time): 1405 | END (Date): 12/3/96 (Time): 1426

WELL CASING DIAMETER: 2" ( ) 4" ( ) 5" ( ) | WEATHER: Sunny ~ 69°F

FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC (Black mark

OVM READING: 0 | ORIG. DTW: 121.32 | FINAL DTW: 121.83

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump ( )

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 5" - 0.93 6" - 1.50				
164	-	121.32	=	42.68	x	28.2	Gal./Csg Vol.	x	3 Csg. Vol. =	85 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ (°C)	pH (s.a.)	COND. (umhos/ml)	TURB. (NTs)	DISSOLVED OXYGEN (%) ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 140
1408	3	19.5	23.33	6.62	2.649	-686.9	62.0	95.7	
1409	4	26.0	23.34	6.66	2.550	-686.9	61.5	83.7	
1410	5	32.5	23.33	6.69	2.509	-686.1	60.6	74.8	
1411	6	39.0	23.35	6.70	2.524	909.1	59.6	70.0	
1412	7	45.5	23.41	6.71	2.582	953.7	59.7	66.2	
1413	8	52	23.50	6.72	2.634	-697.2	60.4	66.6	
1414	9	58.5	23.50	6.72	2.697	13.9	60.5	66.7	
1416	11	71.5	23.56	6.73	2.668	331.2	61.3	67.9	
1417	12	78	23.59	6.75	2.681	452.6	62.0	69.7	
1419	14	91	23.57	6.75	2.686	487.7	62.6	71.0	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 37.752 Purge rate = 6.5 gpm 1.3 min. interv

Final meter reading: 37.893

Number of container: 10 bottles

ASB sample 24NEW7-902 collected at 1345 (6 bottles)

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206 .009 | TEAM: Non-dedicated Pump (✓) Dedicated Pump ( )

PURGING LOG

WELL NO.: 24NEW8 | SAMPLE NO.: 24NEW8 -002

START (Date): 12/3/96 (Time): 1252 | END (Date): 12/3/96 (Time): 1315

WELL CASING DIAMETER: 2" ( ) 4" (✓) 5" ( ) | WEATHER: Sunny ~70°F

FIELD PERSONNEL'S NAME(S): Brian Trink (CDM) Philip McKay (Water Development)

REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark

OVM READING: 0 | ORIG. DTW: 124.85 | FINAL DTW: 124.96

PURGE METHOD: Packers ( ) Multiple Port ( ) Teflon Bailer ( ) Submersible Grundfos Pump (✓)

MEASURED WELL TD		ORIGINAL DTW		CASING VOLUME		4" - 0.66 / 5" - 0.93 / 6" - 1.50				
168	-	124.85	=	43.15	x	2.85	Gal./Csg Vol.	x	3 Csg. Vol. =	8.5 Gal.

PURGE WATER CONTAINERIZED? YES | AVERAGE PURGE RATE: 8 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. ~~(oF)~~ °C	pH (s.a.)	COND. (umhos/m)	TURB. (NTu)	DISSOLVED OXYGEN % ~~(mg/l)~~	REDOX (mV)	COMMENT Pump set at 140'
1255	2	16	25.24	6.95	2.271	-690.5	84.9	86.5	Very cloudy water
1256	3	24	24.63	6.96	2.271	-689.5	85.2	91.1	
1257	4	32	24.49	6.96	2.272	-689.2	85.3	93.1	
1258	5	40	24.39	6.96	2.271	-689.1	85.2	93.[illegible]	
1259	6	48	24.27	6.96	2.255	-683.8	85.4	88.6	
1300	7	56	24.31	6.96	2.249	-688.9	85.2	86.1	
1301	8	64	24.21	6.97	2.255	625.6	85.2	84.3	
1302	9	72	24.30	6.96	2.258	511.8	85.1	84.7	
1303	10	80	24.54	6.95	2.269	302.9	85.0	87.0	
1304	11	88	24.57	6.94	2.285	317.1	85.2	88.9	

Air Entrainment Survey ( ) | Field Blanks ( )

SAMPLING LOG

SAMPLING METHOD: Packer ( ) Bailer ( ) Portable Pump (✓)

LAB ANALYSES: VOA (✓) SVOA ( ) Filtered Metals (✓)

TPH-Gasoline ( ) TPH-Diesel ( ) Pesticides ( ) Herbicides ( )

Gross Alpha/Beta ( ) General Chemistry (✓) Treatability Parameters (✓)

COMMENT: Initial meter reading: 37,562 Purge rate = 8 gpm 1 min. interval

Final meter reading: 37,752

Number of container: 10 bottles

DNAPL WELL SCREENING FIELD DATA SHEETS

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 24NEW4	Well Casing Diameter (in.): 2 3 (4) 5 6
Well Condition: (Good) Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 109.31	Well Total Depth (ft): 155.11
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1225	109.31	.5	N		
1225	119	.5	N		
1226	129		N		
1226	139		N		
1227	149		N		
1227	155.11		N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: OTDG-MW 71	Well Casing Diameter (in.): 2 3 (4) 5 6
Well Condition: (Good) Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 108.54	Well Total Depth (ft): 158.95
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1210	108.54	.5	N		
1210	118		N		
1211	128		N		
1211	138		N		
1212	148		N		
1212	158.95		N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 18BGMW03E ~~18BGMW03E~~	Well Casing Diameter (in.): 2 3 4 (5) 6
Well Condition: Good Other (explain)	Reference Point of Depth Measurement: TOC other (explain)
DTW (ft.): —	Well Total Depth (ft): —
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments

MC 11/21/96

Comments: No DNAPL Encountered - Dedicated well - Probe will not fit inside casing.

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 24NewS	Well Casing Diameter (in.): 2 3 4 (5) 6
Well Condition: Good (Other) (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 114.88	Well Total Depth (ft): 253.90
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1142	114.88	.5	N		
1142	124		N		
1143	134		N		
1143	144		N		
1144	154		N		
1144	164		N		
1145	174		N		
1145	184		N		
1146	194		N		
1146	204		N		
1147	214-224		N		
1147	234		N		
1148	244		N		
1148	253.90		N		

Comments: No DNAPL Encountered
No Well CAP

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 22DBMW47 2ip ~~22DGMW47~~	Well Casing Diameter (in.): 2 3 (4) 5 6
Well Condition: (Good) Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 113.60	Well Total Depth (ft): 162.91
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1134	113.60	.5	N		
1134	123	↓	N		
1135	133		N		
1135	143		N		
1136	153		N		
1136	162.91		N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 24AS1	Well Casing Diameter (in.): (2) 3 4 5 6
Well Condition: (Good) Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 117.45	Well Total Depth (ft): 160.55
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1117	117.45	.5	N		
1117	127	↓	N		
1118	137		N		
1119	147		N		
1120	157		N		
1120	160.55	✓	N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 24AS2A	Well Casing Diameter (in.): (2) 3 4 5 6
Well Condition: (Good) Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 117.40	Well Total Depth (ft): 159.65
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1107	117.40	.5	N		
1107	127		N		
1108	137		N		
1109	147		N		
1109	157		N		
1110	159.65		N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 24NeW 1	Well Casing Diameter (in.): 2 3 4 (5) 6
Well Condition: Good Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 118.37	Well Total Depth (ft): 250.15
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1049	118.37	.5	N		
1050	129	↓	N		
1051	139		N		
1051	149		N		
1052	159		N		
1052	169		N		
1053	179		N		
1053	189		N		
1054	199		N		
1054	209		N		
1055	219		N		
1055	229		N		
1056	239		N		
1056	249		N		
1057	250.15	↓	N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.

MARINE CORPS AIR STATION EL TORO
DNAPL[1] WELL SCREENING FIELD DATA SHEET

Project No: 6206-009	Date: 11/21/96

Well Data Log

Well No.: 09DBMW45	Well Casing Diameter (in.): 2 3 (4) 5 6
Well Condition: Good Other (explain)	Reference Point of Depth Measurement: (TOC) other (explain)
DTW (ft.): 118.18	Well Total Depth (ft): 162.51
Field Personnel Names: Mike Oliphant	Equipment Type/Serial No.: Solinst Interface Probe MODEL 121 SERIAL # INT001667
OVM Reading: 0 ppm	Decon[2] (y/n) yes

Non-Aqueous Interface Log

Time	Interface Probe Depth at 10 ft Increments from Top of Water Column	Estimated Probe Decent Rate (ft/sec)	DNAPL Encounter (y/n)	DNAPL Interface Depth (ft)	Comments
1035	118.18	.5	N		
1036	129		N		
1037	139		N		
1038	149		N		
1039	159		N		
1039	162		N		

Comments: No DNAPL Encountered

1. Dense Non-Aqueous Phase Liquid
2. Refer to MCAS El Toro Sampling and Analysis Plan Section 6.9.2 for decontamination procedures.