

C A M B R I A

ENVIRONMENTAL November 11, 1998
PROTECTION

Larry Seto
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

88 NOV 17 PM 3:13

Re: **Third Quarter 1998 Monitoring Report**
Former Shell Service Station
1230 14th Street
Oakland, California
WIC #204-4878-1300
Cambria Project #24-314-398



Dear Mr. Seto:

On behalf of Equilon Enterprises LLC, (Equilon) Cambria Environmental Technology, Inc. (Cambria) is submitting this ground water monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

THIRD QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged water levels and measured dissolved oxygen (DO) concentrations in all wells. Consistent with the current monitoring program, no wells were sampled this quarter. Cambria calculated ground water elevations and compiled the DO concentrations and historical analytical data (Table 1) and prepared a ground water elevation contour map (Figure 1). The Blaine report and supporting field notes are included as Attachment A.

ANTICIPATED FOURTH QUARTER 1998 ACTIVITIES

Ground Water Monitoring: In accordance with the new sampling frequency, Blaine will gauge water levels and measure DO concentrations in all wells and sample wells MW-2, MW-3, and MW-4. Wells MW-1, VW/MW-2, and VW/MW-4 contain oxygen reducing compounds (ORCs). These wells will be sampled once DO concentrations return to pre-ORC installation levels. Cambria will tabulate the data and prepare a monitoring report.

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

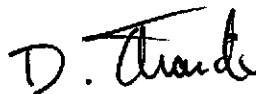
**Cambria
Environmental
Technology, Inc.**

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

CLOSING

We appreciate the opportunity to work with you on this project. Please call Darryk Ataide at (510) 420-3339 if you have any questions or comments.

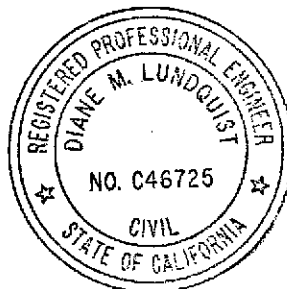
Sincerely,
Cambria Environmental Technology, Inc.



Darryk Ataide
Project Environmental Scientist



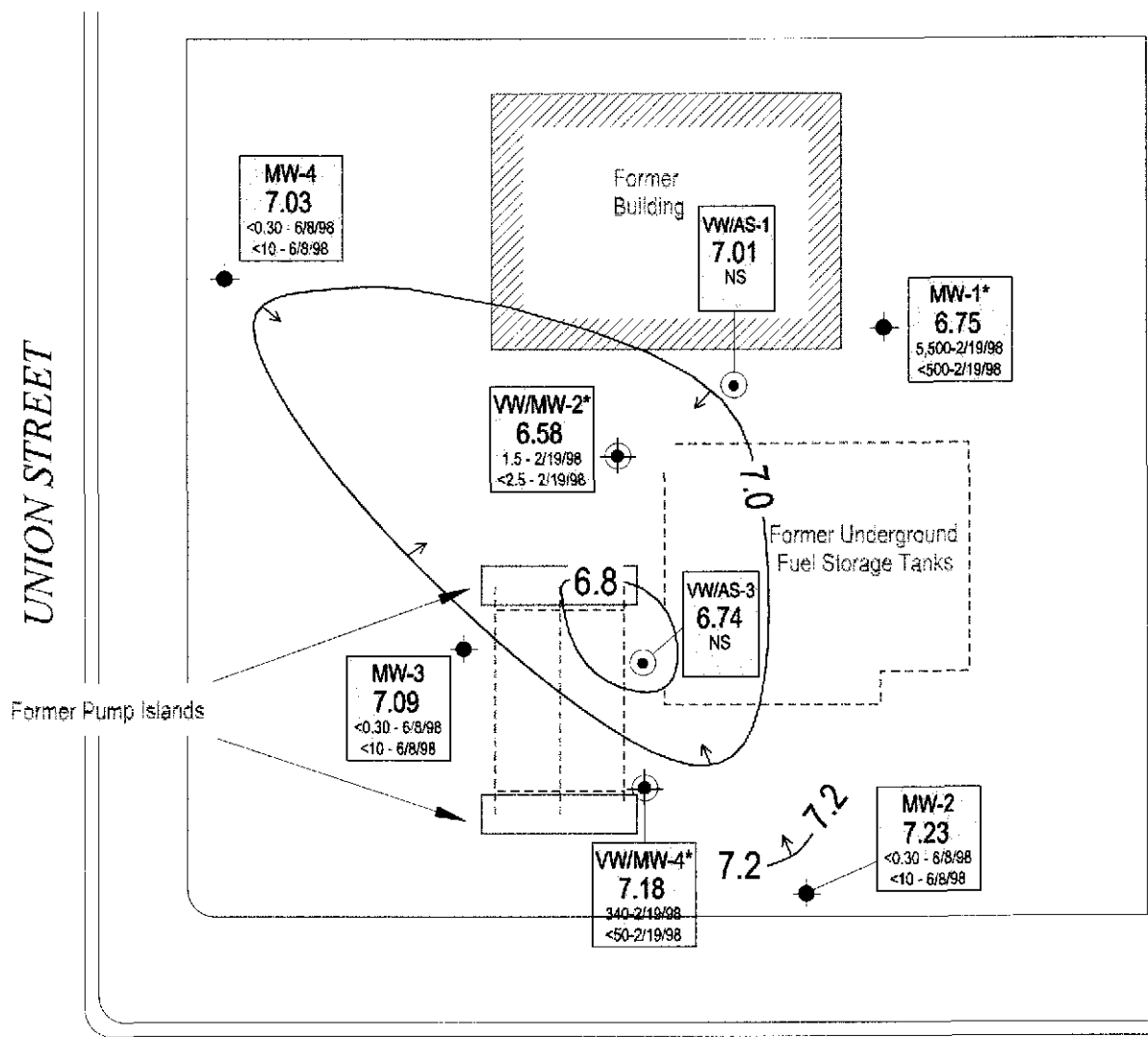
Diane M. Lundquist, P.E.
Principal Engineer



Attachment: A - Blaine Ground Water Monitoring Report and Field Notes

cc: Karen Petryna, Equiva Services LLC, P.O. Box 6249, Carson, California 90749

G:\OAK1230\QMs\3Q98QM.WPD



EXPLANATION

- MW-2 ● Ground Water Monitoring Well
 - VWIAS-3 ⊙ Combination Air Sparge/Soil Vapor Extraction Well
 - VW/MW-4 ⊕ Combination Soil Vapor Extraction Well/Monitoring Well
 - X-X- Ground Water Contour
 - Ground Water Flow Direction
 - NS Not Sampled
 - * Not Contoured, ORCs in well
1. Ground water elevation, ft above mean sea level (msl)
 2. Benzene and MTBE concentrations are in parts per billion (ppb)
 3. Date is most recent sampling unless otherwise indicated

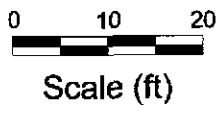


FIGURE
1

Former Shell Service Station
 1230 14th Street
 Oakland, California
 WIC #204-4878-1300



C A M B R I A

Ground Water Elevation Contours

August 25, 1998

C:\WORK\PROJECTS\98\88\MP.DWG

Table 1. Ground Water Elevations and Analytical Data - Former Shell Service Station WIC# 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	MTBE ←	Benzene Toluene Ethylbenzene Xylenes (Concentrations in µg/L)				POG →	DO (mg/L)
								Benzene	Toluene	Ethylbenzene	Xylenes		
MW-1	03/25/96	9.53	9.05	---	---	37,000	<500	7,400	1,500	720	3,300	<5,000	---
(Gauge only - ORC)	06/21/96	10.72	7.86	NE	---	35,000	890	9,900	460	340	3,500	<5,000	---
TOC = 18.58	09/26/96	12.88	5.70	W	---	19,000	<250	8,200	510	780	790	3,800	---
	12/19/96	12.59	5.99	N	---	27,000	<100	120	1,200	1,400	2,800	9,000	---
	12/19/96 ^{dup}	12.59	5.99	N	---	32,000	830	12,000	1,300	1,600	3,100	8,800	---
	03/25/97	11.10	7.48	NE	0.03	39,000	730	13,000	1,600	840	3,100	<5,000	1.2
	06/26/97 ^a	12.42	6.16	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	13.31	5.27	NE	0.005	---	---	---	---	---	---	---	0.8
	12/05/97	12.65	5.93	NE	0.005	---	---	---	---	---	---	---	0.3
	02/19/98	6.46	12.12	SW	0.025	16,000	<500	5,500	450	500	800	<5,000	2.4
	06/08/98	6.62	11.96	SW	0.026	---	---	---	---	---	---	---	1.2
	08/25/98	11.83	6.75	---	---	---	---	---	---	---	---	---	2.8
MW-2	03/25/96	8.19	9.71	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
(2nd & 4th)	06/21/96	9.94	7.96	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
TOC = 17.90	09/26/96	12.15	5.75	NW	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	11.70	6.20	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.25	8.65	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	1.8
	06/26/97	11.36	6.54	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.4
	09/26/97	12.56	5.34	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	09/26/97 ^{dup}	12.56	5.34	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	12/05/97	11.15	6.75	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	0.7
	02/19/98	5.61	12.29	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.7
	06/08/98	5.58	12.32	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	<5,000	3.2
	08/25/98	10.67	7.23	---	---	---	---	---	---	---	---	---	1.7
MW-3	03/25/96	8.47	9.71	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
(2nd & 4th)	06/21/96	10.40	7.78	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
TOC = 18.18	09/26/96	12.45	5.73	N	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	12.14	6.02	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.54	8.64	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	2.2
	06/26/97	11.66	6.52	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	3.6
	09/26/97	12.85	5.33	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	12/05/97	11.44	6.74	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	0.6
	02/19/98	6.78	11.40	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	3.6

Table 1. Ground Water Elevations and Analytical Data - Former Shell Service Station WIC# 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG →	DO (mg/L)
(Concentrations in µg/L)													
	06/08/98	6.82	11.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	<5,000	3.8
	06/08/98 ^{dup}	6.82	11.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	---	3.8
	08/25/98	11.09	7.09	---	---	---	---	---	---	---	---	---	1.2
MW-4 (2nd & 4th) TOC = 18.01	03/25/96	9.20	8.81	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	06/21/96	10.25	7.76	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	09/26/96	12.29	5.72	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	12.47	5.54	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.44	8.57	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	1.8
	06/26/97	11.57	6.44	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.2
	06/26/97 ^{dup}	11.57	6.44	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.2
	09/26/97	12.75	5.26	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.1
	12/05/97	11.37	6.64	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.0
	12/05/97 ^{dup}	11.37	6.64	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.0
	02/19/98	5.59	12.42	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.5
	06/08/98	5.65	12.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	6,700	2.6
	08/25/98	10.98	7.03	---	---	---	---	---	---	---	---	---	2.4
VW/MW-2 (Gauge only - ORC) TOC = 18.30	03/25/96	9.04	9.26	---	---	13,000	<250	900	920	180	1,500	---	---
	06/21/96	10.48	7.82	NE	---	27,000	700	4,100	1,100	1,400	3,200	---	---
	09/26/96	12.52	5.78	NE	---	27,000	<500	5,300	1,900	980	2,200	---	---
	09/26/96 ^{dup}	12.52	5.78	NE	---	29,000	<250	5,800	2,200	1,100	2,500	---	---
	12/19/96	12.42	5.88	N	---	50,000	590	6,200	5,100	1,700	5,600	---	---
	03/25/97	9.83	8.47	NE	0.03	210	14	5.6	<0.50	0.52	<0.50	---	2.0
	03/25/97 ^{dup}	9.83	8.47	NE	0.03	250	4.7	1.7	0.58	0.51	<0.50	---	2.0
	06/26/97 ^a	12.43	5.87	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	12.98	5.32	NE	0.005	---	---	---	---	---	---	---	0.9
	12/05/97	12.20	6.10	NE	0.005	---	---	---	---	---	---	---	0.4
	02/19/98	5.83	12.47	SW	0.025	<50	<2.5	1.5	<0.50	<0.50	0.71	<5,000	3.6
	06/08/98	5.80	12.50	SW	0.026	---	---	---	---	---	---	---	1.0
	08/25/98	11.72	6.58	---	---	---	---	---	---	---	---	---	4.8
VW/MW-4 (Gauge only - ORC) TOC = 18.14	03/25/96	8.45	9.69	---	---	83,000	<250	6,500	7,000	2,000	11,000	---	---
	03/25/96 ^{dup}	8.45	9.69	---	---	84,000	<250	6,400	7,000	2,100	12,000	---	---
	06/21/96	10.38	7.76	NE	---	110,000	1,700	14,000	15,000	3,700	17,000	---	---

Table 1. Ground Water Elevations and Analytical Data - Former Shell Service Station WIC# 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	(Concentrations in µg/L)					POG →	DO (mg/L)
							MTBE	Benzene	Toluene	Ethylbenzene	Xylenes		
	06/21/96 ^{dup}	10.38	7.76	NE	---	100,000	<1,000	12,000	12,000	2,900	13,000	---	---
	09/26/96	12.43	5.71	NE	---	52,000	<500	13,000	2,700	2,100	3,200	---	---
	12/19/96	11.87	6.27	N	---	75,000	<1,250	15,000	6,600	3,000	7,600	---	---
	03/25/97	9.60	8.54	NE	0.03	56,000	580	4,700	1,500	2,500	6,300	---	2.4
	06/26/97 ^a	12.36	5.78	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	12.82	5.32	NE	0.005	---	---	---	---	---	---	---	0.4
	12/05/97	12.15	5.99	NE	0.005	---	---	---	---	---	---	---	0.3
	02/19/98	5.85	12.29	SW	0.025	4,100	<50	320	40	44	520	<5,000	1.8
	02/19/98 ^{dup}	5.85	12.29	SW	0.025	4,300	<50	340	44	47	540	<5,000	1.8
	06/08/98	5.87	12.27	SW	0.026	---	---	---	---	---	---	---	1.8
	08/25/98	10.96	7.18	---	---	---	---	---	---	---	---	---	2.5
VW/AS-1 (Gauge only) TOC = 18.60	03/25/96	8.98	9.62	---	---	---	---	---	---	---	---	---	---
	06/21/96	10.95	7.65	NE	---	---	---	---	---	---	---	---	---
	09/26/96	12.98	5.62	N	---	---	---	---	---	---	---	---	---
	12/19/96	12.67	5.93	N	---	---	---	---	---	---	---	---	---
	03/25/97	10.12	8.48	NE	0.03	---	---	---	---	---	---	---	---
	06/26/97	12.34	6.26	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97	13.40	5.20	NE	0.005	---	---	---	---	---	---	---	---
	12/05/97	11.96	6.64	NE	0.005	---	---	---	---	---	---	---	5.2 ^c
	02/19/98	6.22	12.38	SW	0.025	---	---	---	---	---	---	---	1.3
	06/08/98	6.20	12.40	SW	0.026	---	---	---	---	---	---	---	1.0
	08/25/98	11.59	7.01	---	---	---	---	---	---	---	---	---	1.6
VW/AS-3 (Gauge only) TOC = 18.17	03/25/96	8.50	9.67	---	---	---	---	---	---	---	---	---	---
	06/21/96	10.42	7.75	NE	---	---	---	---	---	---	---	---	---
	09/26/96	12.49	5.68	NE	---	---	---	---	---	---	---	---	---
	12/19/96	12.28	5.89	N	---	---	---	---	---	---	---	---	---
	03/25/97	9.61	8.56	NE	0.03	---	---	---	---	---	---	---	---
	06/26/97	11.80	6.37	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97	12.89	5.28	NE	0.005	---	---	---	---	---	---	---	---
	12/05/97	11.38	6.79	NE	0.005	---	---	---	---	---	---	---	1.8 ^c
	02/19/98	6.24	11.93	SW	0.025	---	---	---	---	---	---	---	1.3
	06/08/98	6.25	11.92	SW	0.026	---	---	---	---	---	---	---	1.2
	08/25/98	11.43	6.74	---	---	---	---	---	---	---	---	---	1.3

Table 1. Ground Water Elevations and Analytical Data - Former Shell Service Station WIC# 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG →	DO (mg/L)
						(Concentrations in µg/L)							
MCLs						NE	NE	1	150	700	1,750	NE	

Abbreviations:

GW = Ground water
 ft = Feet
 µg/L = Micrograms per liter
 mg/L = Milligrams per liter
 TOC = Top of casing elevation
 TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 MTBE = Methyl tert-butyl ether by EPA Method 8020
 POG = Petroleum oil and grease by SMWW 5520 B&F
 DO = Dissolved oxygen
 dup = Duplicate sample
 MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)
 NE = MCLs not established

Notes:

a = Oxygen releasing compounds installed in wells were removed prior to gauging.
 b = DO reading not taken due to small diameter of well.
 c = Used pin bailer to capture water and take DO readings up-hole on December 12, 1997.
 --- = Not analyzed/Not available
 <n = Below detection limits of n µg/L

 Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020.

ATTACHMENT A

Blaine Ground Water Monitoring Report
and Field Notes

BLAINE
TECH SERVICES INC.



1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE

September 18, 1998

Equilon Enterprises, L.L.C.
P.O. Box 8080
Martinez, CA 94553

Attn: Karen Petryna

Shell WIC #204-5508-3103
1230 14th Street
Oakland, California

3rd Quarter 1998

Groundwater Monitoring Report 980825-Y-2

Blaine Tech Services, Inc. performs environmental monitoring and documentation as an independent third party. Copies of our Monitoring Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,



Francis Thie

attachments: Table of Well Gauging Data
Field Data Sheets

cc: Cambria Environmental Technology, Inc.
1144 65th Street, Suite C
Oakland, CA 94608-2411
Attn: Aubrey Cool

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	08/25/98	TOC	-	NONE	-	-	11.83	22.15
MW-2	08/25/98	TOC	-	NONE	-	-	10.67	21.98
MW-3	08/25/98	TOC	-	NONE	-	-	11.09	19.38
MW-4	08/25/98	TOC	-	NONE	-	-	10.98	20.37
VW/MW-2	08/25/98	TOC	-	NONE	-	-	11.72	20.98
VW/MW-4	08/25/98	TOC	-	NONE	-	-	10.96	19.22
VW/AS-1	08/25/98	TOC	-	NONE	-	-	11.59	19.06
VW/AS-3	08/25/98	TOC	-	NONE	-	-	11.43	19.64

