

STID 469

July 16, 1996  
SCI 447.055

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ENVIRONMENTAL  
PROTECTION  
96 JUL 18 PM 3:45

**Project Update**  
**Free Product Recovery**  
**3093 Broadway**  
**Oakland, California**

Dear Gentlemen:

This letter summarizes the results of free product recovery at the referenced site. On July 9, 1996, all the wells were checked for the presence of free product.. Free product was recovered from wells MW-1, MW-4 and MW-6 by hand bailing. To date a total of approximately 128 gallons of product have been removed as summarized below. Product recovery data are presented on the attached Tables 1 and 2.

<u>Well</u>	<u>Product Thickness 7/9/96 (feet)</u>	<u>Product Removed 7/9/96 (gal)</u>	<u>Total Product Removed (gal)</u>
MW-1	0.20	0.10	8.58
MW-4	0.50	0.16	47.75
MW-6	4.86	4.50	<u>71.90</u>
		Total	128.23

■ **Subsurface Consultants, Inc.**

Mr. George Hill & Mr. Gordon Linden  
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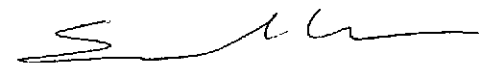
The next free product recovery event will be performed the first week of August. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.



James R. Helge  
Environmental Scientist



Samuel C. Won  
Project Engineer

JRH:SCW:sld

Attachment: Table 1 - Free Product Recovery  
Table 2 - Groundwater and Free Product Elevation Data

cc: ✓ Ms. Susan Hugo  
Senior Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, California 94502-6577

Mr. Jonathan Redding  
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1221 Broadway, 21st Floor  
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**Table 1**  
**FREE PRODUCT RECOVERY**

<u>Well</u>	<u>Removal Date</u>	<u>Product Removed (gallons)</u>	<u>Cumulative Product Removed (gallons)</u>
MW-1	12/23/91	2.00	2.00
	12/26/91	0.50	2.50
	1/13/92	1.00	3.50
	2/28/92	2.00	5.50
	11/9/93	0.50	6.00
	11/3/95	0.25	6.75
	11/30/95	0.25	7.00
	1/3/96	0.53	7.53
	2/2/96	0.75	8.28
	3/1/96	0.10	8.38
	4/4/96	0.00	8.38
	5/2/96	0.00	8.38
	6/5/96	0.10	8.48
	7/9/96	0.10	8.58
	MW-4	12/23/91	2.50
12/26/91		6.00	8.50
1/10/92		5.00	13.50
2/28/92		4.00	17.50
3/11/92		3.50	21.00
3/13/92		3.50	24.50
3/17/92		2.25	26.75
3/18/92		2.50	29.25
3/19/92		1.50	30.75
3/23/92		4.00	34.75
3/24/92		1.50	36.25
3/25/92		1.00	37.25
3/26/92		1.00	38.25
3/27/92		0.50	38.75
3/31/92		0.50	39.25
4/1/92		0.25	39.50
4/2/92		0.13	39.63
4/6/92		0.13	39.76
4/10/92		0.25	40.01
4/13/92	0.25	40.26	

**Table 1**  
**FREE PRODUCT RECOVERY**

<u>Well</u>	<u>Removal Date</u>	<u>Product Removed (gallons)</u>	<u>Cumulative Product Removed (gallons)</u>
MW-4	4/20/92	0.13	40.39
	5/4/92	0.13	40.52
	5/18/92	0.13	40.65
	5/26/92	0.13	40.78
	6/1/92	0.06	40.84
	6/29/92	0.25	41.09
	7/29/92	1.11	42.20
	8/28/92	1.68	43.88
	4/3/93	0.13	44.01
	11/9/93	0.03	44.04
	8/30/95	1.75	45.79
	10/2/95	0.50	46.29
	11/3/95	0.25	46.54
	11/30/95	0.25	46.79
	1/3/96	0.05	46.84
	2/2/96	0.10	46.94
	3/1/96	0.20	47.14
	4/4/96	0.20	47.34
	5/2/96	0.20	47.54
	6/5/96	0.15	47.59
7/9/96	0.16	47.75	
MW-6	12/23/91	7.50	7.50
	12/26/91	2.00	9.50
	1/10/92	1.00	10.50
	2/4/92	2.00	12.50
	2/28/92	3.00	15.50
	3/10/92	2.75	18.25
	3/12/92	2.00	20.25
	3/23/92	1.00	21.25
	3/30/92	0.50	21.75
	4/10/92	0.25	22.00
	4/13/92	0.13	22.13
	4/20/92	0.13	22.26
	5/4/92	0.13	22.39

**Table 1**  
**FREE PRODUCT RECOVERY**

<u>Well</u>	<u>Removal Date</u>	<u>Product Removed (gallons)</u>	<u>Cumulative Product Removed (gallons)</u>
MW-6	5/8/92	0.06	22.45
	5/26/92	0.13	22.58
	6/1/92	0.06	22.64
	6/29/92	0.19	22.83
	7/29/92	0.60	23.43
	8/28/92	2.40	25.83
	12/2/92	(obstruction in well)	- -
	4/3/93	1.75	27.58
	11/9/93	0.83	28.41
	8/30/95	4.50	32.91
	10/2/95	4.0	36.91
	11/3/95	3.00	39.91
	11/30/95	2.50	42.41
	1/3/96	2.50	44.91
	2/2/95	5.00	49.90
	3/1/96	4.00	53.90
	4/4/96	5.00	58.90
	5/2/96	4.50	63.40
	6/5/96	4.00	67.40
	7/9/96	4.50	71.90
<b>Cumulative Total of Product Removed</b>			<b>128.23</b>

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-1	94.48	10/3/90	26.40	68.08	NM	--
		3/5/91	27.46	67.02	NM	--
		3/18/91	26.88	67.60	NM	--
		4/12/91	25.49	68.99	NM	--
		12/23/91	26.86	67.62	1.15	68.77
		12/26/91	26.08	68.40	0.22	68.63
		1/13/92	26.53	67.95	0.66	68.61
		2/28/92	27.75	66.73	0.42	67.15
		5/18/92	24.75	69.73	NM	--
		6/29/92	25.09	69.39	0.04	69.43
		7/29/92	25.46	69.02	0.15	69.17
		8/28/92	25.56	68.92	0.29	69.21
		10/28/92	26.44	68.04	0.52	68.56
		11/24/92	26.63	67.85	NM	--
		12/22/92	26.37	68.11	NM	--
		4/5/93	23.77	70.71	0.00	--
		7/20/93	24.51	69.97	0.60	70.57
		11/9/93	26.06	68.42	1.17	69.59
		8/30/95	21.73	72.75	0.23	72.98
		9/15/95	21.88	72.61	0.15	72.75
		10/2/95	22.42	72.06	0.42	72.48
		11/3/95	23.10	72.74	0.76	73.50
		11/30/95	23.38	72.54	0.70	73.24
1/3/96	23.30	72.62	0.78	73.40		
2/2/96	22.96	72.28	0.84	74.12		
3/1/96	21.69	72.79	0.14	72.65		
4/4/96	21.11	73.67	0.00	--		
5/2/96	20.96	73.83	0.00	--		
6/5/96	20.98	73.81	0.04	73.85		
7/9/96	21.64	72.84	0.20	73.04		
MW-2	94.81	3/5/91	27.86	66.95	0.00	--
		3/18/91	27.46	67.35	0.00	--
		4/12/91	26.98	67.83	0.00	--
		5/18/92	26.50	68.31	0.00	--
		6/29/92	26.80	68.01	0.00	--
		7/29/92	27.08	67.73	0.00	--
		8/28/92	27.33	67.48	0.00	--
		10/28/92	27.65	67.16	0.00	--
		11/24/92	27.91	66.90	0.00	--
12/22/92	27.74	67.07	--	--		

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-2	94.81	4/5/93	25.95	68.86	0.00	--
		7/20/93	25.59	69.22	0.00	--
		11/9/93	26.72	68.09	0.00	--
		8/30/95	25.75	69.06	0.00	--
		10/2/95	25.10	69.71	0.00	--
		11/3/95	25.73	69.02	0.00	--
		11/30/95	25.34	69.41	0.00	--
		1/3/96	25.32	69.43	0.00	--
		2/2/96	25.10	69.65	0.00	--
		3/1/96	24.05	70.76	0.00	--
		4/4/96	23.41	71.49	0.00	--
		5/2/96	23.37	71.53	0.00	--
		6/5/96	23.75	71.11	0.00	--
		7/9/96	23.79	71.02	0.00	--
MW-3	90.08	3/6/91	23.17	66.91	NM	--
		3/18/91	22.76	67.32	NM	--
		4/12/91	22.51	67.57	NM	--
		5/12/92	23.17	66.91	NM	--
		6/29/92	22.90	67.18	NM	--
		7/29/92	22.17	67.91	NM	--
		8/28/92	22.28	67.80	NM	--
		10/28/92	22.67	67.41	0.00	--
		11/24/92	23.01	67.07	0.00	--
		12/22/92	22.91	67.17	--	--
		4/5/93	22.11	67.97	0.00	--
		7/20/93	23.93	66.15	0.00	--
		11/9/93	23.14	66.94	0.00	--
		8/29/95	20.61	69.47	0.00	--
		10/2/95	21.18	68.90	0.00	--
		11/3/95	20.74	69.60	0.00	--
		11/30/95	20.68	69.66	0.00	--
		1/3/96	20.58	69.76	0.00	--
		2/2/96	20.43	69.91	0.00	--
		3/1/96	20.24	69.84	0.00	--
4/4/96	18.50	71.58	0.00	--		
5/2/96	18.43	71.65	0.00	--		
6/5/96	18.51	71.57	0.00	--		
7/9/96	18.97	71.11	0.00	--		

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-4	88.84	3/5/91	23.79	65.05	NM	--
		3/18/91	22.30	66.54	NM	--
		4/12/91	21.85	66.99	NM	--
		12/23/91	22.63	66.22	0.98	67.19
		12/26/91	22.52	66.32	0.96	67.28
		1/10/92	22.74	66.10	0.99	67.09
		2/28/92	22.00	66.84	0.67	67.51
		3/11/92	21.71	67.13	0.55	67.68
		3/13/92	21.56	67.28	0.49	67.77
		3/17/92	25.46	63.38	0.44	63.82
		3/18/92	21.38	67.47	0.44	67.90
		3/19/92	21.33	67.51	0.48	67.99
		3/23/92	21.29	67.55	0.42	67.97
		3/24/92	21.31	67.53	0.38	67.90
		3/25/92	21.17	67.67	0.36	68.04
		3/26/92	21.08	67.76	0.35	68.11
		3/27/92	20.92	67.92	0.26	68.18
		3/31/92	21.15	67.69	0.44	68.13
		4/1/92	20.90	67.94	0.24	68.18
		4/2/92	20.90	67.94	0.17	68.11
		4/10/92	20.91	67.93	0.33	68.26
		4/13/92	21.04	67.80	0.42	68.22
		4/20/92	20.74	68.10	0.19	68.29
		5/4/92	20.83	68.01	0.33	68.34
		5/18/92	21.33	67.51	0.23	67.74
		5/26/92	20.83	68.01	0.17	68.18
		6/1/92	20.85	67.99	0.19	68.17
		6/29/92	21.38	67.46	0.53	67.99
		7/29/92	21.69	67.15	0.56	67.71
		8/28/92	21.35	67.49	0.63	68.12
		10/28/92	22.48	66.36	0.84	67.20
		11/24/92	22.60	66.24	NM	--
		12/22/92	22.47	66.37	NM	--
		4/3/93	20.11	68.73	0.51	69.24
		7/20/93	20.48	68.36	0.52	68.88
		11/9/93	21.71	67.13	0.63	67.76
		8/30/95	19.90	68.94	2.20	71.14
		9/15/95	18.76	70.08	0.57	70.65
		10/2/95	19.17	69.67	0.65	70.32
		11/3/95	19.45	69.39	0.44	69.83
		11/30/95	19.50	69.44	0.32	69.76



**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-4	88.84	1/3/96	19.31	69.53	0.20	69.73
		2/2/96	18.91	69.93	0.20	70.13
		3/1/96	18.25	70.59	0.19	70.78
		4/4/96	17.53	71.31	0.18	71.47
		5/2/96	17.50	71.34	0.25	71.59
		6/5/96	17.67	71.17	0.39	71.56
		7/9/96	18.29	70.55	0.50	71.05
MW-5	84.84	3/18/91	26.31	58.53	NM	--
		3/12/91	26.41	58.43	NM	--
		5/18/92	26.75	58.09	NM	--
		6/29/92	26.73	58.11	NM	--
		7/29/92	26.66	58.18	NM	--
		8/28/92	26.90	57.94	NM	--
		10/28/92	26.39	58.45	0.00	--
		11/24/92	26.83	58.01	0.00	--
		12/22/92	27.33	57.51	--	--
		4/3/93	26.62	58.22	0.00	--
		7/20/93	26.60	58.24	0.00	--
		11/9/93	27.24	57.60	0.00	--
		8/30/95	27.46	57.38	0.00	--
		10/2/95	26.85	57.99	0.00	--
		11/3/95	26.67	58.87	0.00	--
		11/30/95	27.05	58.49	0.00	--
		1/3/96	26.60	59.04	0.00	--
		2/2/96	26.70	59.14	0.00	--
		3/1/96	26.00	58.84	0.00	--
		4/4/96	26.20	58.64	0.00	--
5/2/96	26.02	58.82	0.00	--		
6/5/96	25.91	58.93	0.00	--		
7/9/96	26.20	58.64	0.00	--		
MW-6	85.62	3/18/91	25.82	59.80	NM	--
		4/12/91	27.23	58.39	NM	--
		12/23/91	28.40	57.22	3.21	60.44
		12/26/91	27.25	58.37	1.67	60.04
		1/10/92	27.23	58.39	0.90	59.29
		2/4/92	27.71	57.91	2.04	59.95
		2/28/92	27.92	57.70	3.00	60.70
		3/10/92	27.16	58.46	2.06	60.53
		3/12/92	25.96	59.66	0.52	60.18

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-6	85.62	3/13/92	25.70	59.92	0.21	60.13
		3/23/92	26.34	59.28	1.09	60.37
		3/30/92	25.73	59.89	0.35	60.25
		4/10/92	25.29	60.33	0.05	60.38
		4/13/92	25.52	60.10	0.21	60.31
		4/20/92	25.38	60.25	0.10	60.35
		5/4/92	25.40	60.22	NM	--
		5/18/92	25.50	60.12	0.17	60.29
		5/26/92	25.46	60.16	0.13	60.29
		6/1/92	25.46	60.16	0.09	60.26
		6/29/92	25.59	60.03	0.14	60.17
		7/29/92	26.90	58.72	1.71	60.43
		8/28/92	25.09	60.53	2.62	63.15
		10/28/92	25.02	60.60	3.94	64.54
		11/24/92	28.87	56.75	NM	--
		4/3/93	26.96	58.66	2.86	61.52
		7/20/93	26.17	59.45	2.60	62.05
		11/9/93	27.51	58.11	3.06	61.17
		8/30/95	28.00	57.62	7.96	65.58
		9/15/95	28.24	57.38	6.14	63.52
		10/2/95	28.39	57.23	6.13	63.36
		11/3/95	26.91	58.71	3.44	62.15
		11/30/95	27.58	58.04	4.41	62.45
		1/3/96	27.58	58.04	4.37	62.41
		2/2/96	27.96	57.68	5.15	62.83
		3/1/96	27.96	57.68	5.41	63.09
		4/4/96	27.69	57.93	5.69	63.62
5/2/96	26.83	58.79	4.66	63.45		
6/5/96	27.15	58.47	5.17	63.64		
7/9/96	27.08	58.54	4.86	63.40		
MW-7	85.41	3/18/91	21.63	63.78	NM	--
		4/12/91	22.13	63.28	NM	--
		5/18/92	21.67	63.74	NM	--
		6/29/92	20.75	64.66	NM	--
		7/29/92	21.07	64.34	NM	--
		8/28/92	21.35	64.06	NM	--
		10/28/92	21.81	63.60	0.00	--
		11/24/92	21.52	63.89	0.00	--
		12/22/92	obstructed	-	0.00	--
		4/3/93	20.08	65.33	0.00	--

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-7	85.41	7/20/93	19.59	65.82	0.00	--
		11/9/93	20.65	64.76	0.00	--
		8/30/95	18.78	66.63	0.00	--
		10/2/95	18.73	66.68	0.00	--
		11/3/95	19.23	66.18	0.00	--
		11/30/95	19.47	65.94	0.00	--
		1/3/96	18.52	66.89	0.00	--
		2/2/96	17.83	67.58	0.00	--
		3/1/96	17.61	67.80	0.00	--
		4/4/96	17.28	68.13	0.00	--
		5/2/96	17.15	68.26	0.00	--
		6/5/96	17.47	67.94	0.00	--
		7/9/96	18.06	67.35	0.00	--
MW-8	85.50	10/28/92	27.70	57.80	0.00	--
		11/24/92	27.62	57.88	0.00	--
		12/22/92	27.40	58.10	--	--
		4/3/93	26.64	58.86	0.00	--
		7/20/93	26.60	58.90	0.00	--
		11/9/93	27.18	58.32	0.00	--
		8/30/95	26.35	59.15	0.00	--
		10/2/95	26.60	58.90	0.00	--
		11/3/95	26.62	58.88	0.00	--
		11/30/95	26.72	58.78	0.00	--
		1/3/96	26.64	58.86	0.00	--
		2/2/96	26.28	59.22	0.00	--
		3/1/96	25.81	59.69	0.00	--
		4/4/96	25.81	59.69	0.00	--
		5/2/96	26.15	60.03	0.00	--
6/5/96	26.17	60.01	0.00	--		
7/9/96	26.32	59.18	0.00	--		
MW-9	90.37	10/28/92	23.37	67.00	0.00	--
		11/24/92	23.51	66.86	0.00	--
		12/22/92	23.31	67.06	--	--
		4/3/93	21.14	69.23	0.00	--
		7/20/93	21.54	68.83	0.00	--
		11/9/93	27.53	62.84	0.00	--
		8/30/95	19.59	70.78	0.00	--
		10/2/95	20.05	70.32	0.00	--
		11/3/95	20.40	69.97	0.00	--

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-9	90.37	11/30/95	20.65	69.72	0.00	--
		1/3/96	20.73	69.64	0.00	--
		2/2/96	20.19	70.18	0.00	--
		3/1/96	19.53	70.84	0.00	--
		4/4/96	18.74	71.63	0.00	--
		5/2/96	18.63	71.74	0.00	--
		7/9/96	19.15	71.22	0.00	--
MW-10	88.60	10/28/92	21.55	67.05	0.00	--
		11/24/92	21.86	66.74	0.00	--
		12/22/92	21.68	66.92	--	--
		4/3/93	19.14	69.46	0.00	--
		7/20/93	19.79	68.81	0.00	--
		11/9/93	20.83	67.77	0.00	--
		8/30/95	17.99	70.61	0.00	--
		10/2/95	18.42	70.18	0.00	--
		11/3/95	18.82	69.78	0.00	--
		11/30/95	19.03	69.57	0.00	--
		1/3/96	18.96	69.64	0.00	--
		2/2/96	18.55	70.05	0.00	--
		3/1/96	17.81	70.79	0.00	--
		4/4/96	17.11	71.49	0.00	--
		5/2/96	17.04	71.56	0.00	--
		6/5/96	17.11	71.49	0.00	--
7/9/96	17.64	70.96	0.00	--		
MW-11	102.06	11/24/92	33.65	68.41	0.00	--
		12/22/92	33.37	68.69	--	--
		4/5/93	31.03	71.03	0.00	--
		7/20/93	31.90	70.16	0.00	--
		11/9/93	32.60	69.46	0.00	--
		8/29/95	28.92	73.14		
		10/2/95	29.48	72.58	0.00	--
		11/3/95	29.73	72.33	0.00	--
		11/30/95	30.26	71.80	0.00	--
		1/3/96	30.06	72.00	0.00	--
		2/2/96	29.67	72.39	0.00	--
		3/1/96	28.74	73.32	0.00	--
		4/4/96	28.13	73.93	0.00	--
		5/2/96	28.26	74.06	0.00	--
		6/5/96	28.30	74.02	0.00	--

**Table 2**  
**GROUNDWATER AND FREE PRODUCT ELEVATION DATA**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>	<u>Product Thickness (feet)</u>	<u>Product Elevation (feet)</u>
MW-11	102.06	7/9/96	28.92	73.14	0.00	--
MW-13	84.06	11/24/92	26.05	58.01	0.00	--
		12/22/92	25.08	58.98	--	--
		4/5/93	24.64	59.42	0.00	--
		7/20/93	24.29	59.77	0.00	--
		11/9/93	24.23	59.83	0.00	--
		8/29/95	23.30	60.76	NM	--
		10/2/95	23.78	60.28	0.00	--
		11/3/95	23.73	60.33	0.00	--
		11/30/95	23.80	60.26	0.00	--
		1/3/96	23.95	60.11	0.00	--
		2/2/96	23.70	60.36	0.00	--
		3/1/96	23.36	60.70	0.00	--
		4/4/96	23.27	60.79	0.00	--
		5/2/96	23.35	60.87	0.00	--
		6/5/96	23.07	60.99	0.00	--
		7/9/96	23.31	60.75	0.00	--

Reference datum: arbitrary benchmark established by Levine Fricke.

TOC = Top of casing

Groundwater depths are measured below TOC.

NM = Not measured