

December 20, 2016

Project LC-07-04279A

Ms. Mary Rinehart, Town Clerk  
Town of Onalaska  
Town Hall  
N5589 Commerce Road  
Onalaska, WI 54650

**RECEIVED****DEC 23 2016****DNR-WCR**

Re: Fourth Quarter 2016 Onalaska Landfill Gas Monitoring  
Onalaska Municipal Landfill Site  
Onalaska, Wisconsin

Dear Ms. Rinehart:

Braun Intertec Corporation (Braun Intertec) is presenting gas-monitoring data for the referenced site. The landfill gas monitoring is based on requirements of item number 18 of the Consent Decree with the United States Environmental Protection Agency (USEPA). Item number 18 states that the "settling Defendant shall take explosimeter and oxygen readings at all landfill gas monitoring wells on a quarterly basis according to procedures to be established by USEPA and Wisconsin Department of Natural Resources (WDNR), unless approval is obtained from the USEPA in consultation with WDNR to perform such readings on a less frequent basis." Mr. Larry Lester of the WDNR—South Central Region Headquarters, provided the Consent Decree information to Braun Intertec.

On December 2, 2016, Braun Intertec personnel collected oxygen and explosimeter (LEL) readings at seven landfill gas monitoring wells, identified on the landfill gas piping map, for the Onalaska municipal landfill site as LG-1 through LG-7. December oxygen level readings at gas monitoring points LG-1, LG-2, LG-5, LG-6 and LG-7 were higher than the previous gas monitoring. Gas monitoring point LG-3 was lower than previous gas monitoring. Gas monitoring point LG-4 remained the same as the previous gas monitoring. Figure 1 depicts the oxygen level readings versus time. The December LEL readings at gas monitoring points LG-1, LG-2 and LG-3 were higher than previous gas monitoring. Gas monitoring point LG-5 was lower than previous gas monitoring. Gas monitoring points LG-4, LG-6 and LG-7 remained the same as the previous gas monitoring. Figure 2 depicts the LEL readings versus time. Tables 1A and 1B provide a historical summary of oxygen and LEL readings. The LEL and oxygen field readings, along with site observations, are provided on the Site Visit Sheet.

If you have any questions or comments regarding this project, please call David Bradshaw at 608.781.7277.

Sincerely,

BRAUN INTERTEC CORPORATION

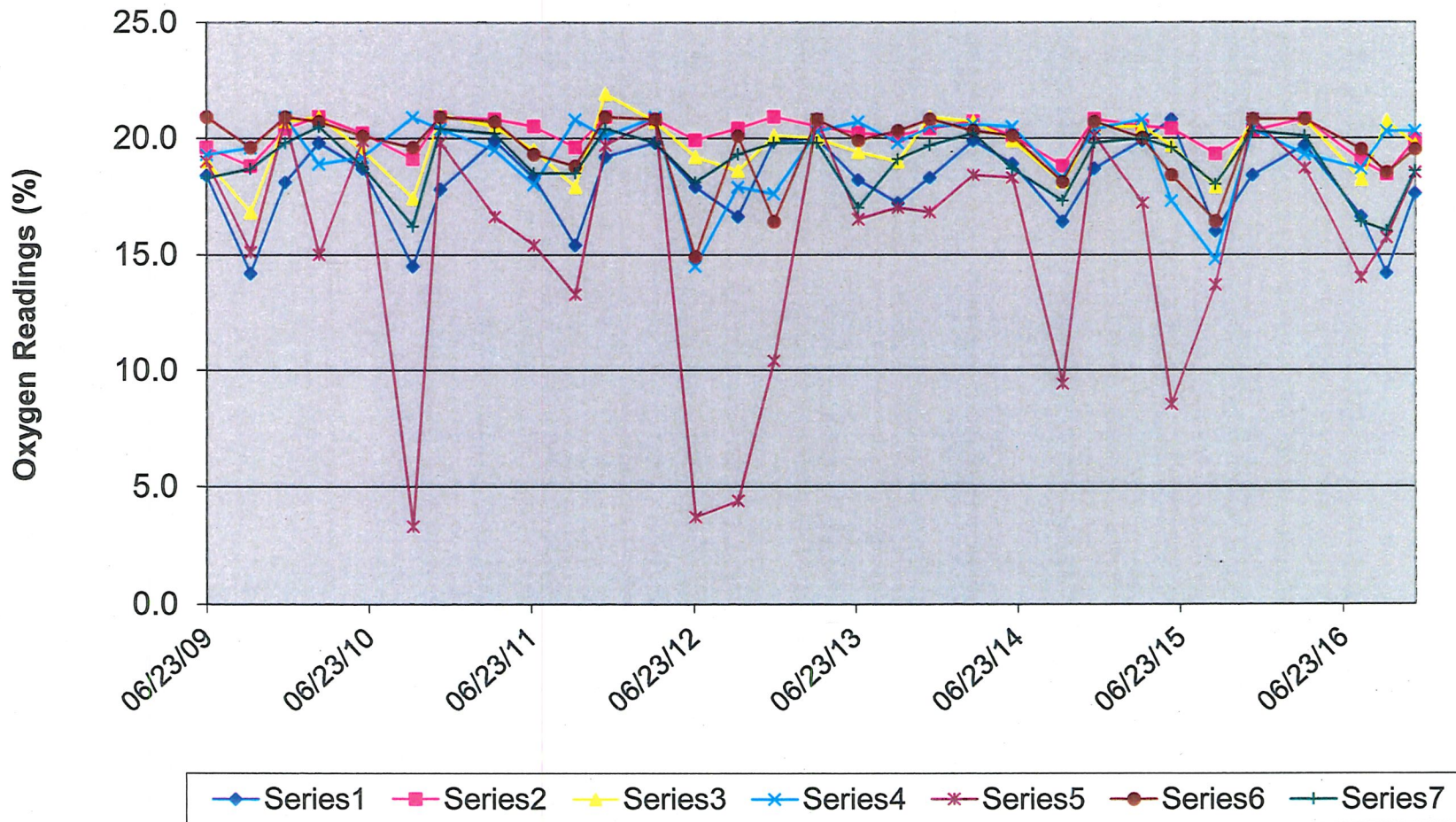


David M. Bradshaw  
Environmental Field Technician

## Attachments:

- Figure 1 - Oxygen Level Trends
- Figure 2 - LEL Concentration Trends
- Table 1A - Landfill Oxygen Monitoring Results
- Table 1B - Landfill LEL Monitoring Results
- Site Visit Sheet

## Oxygen Levels

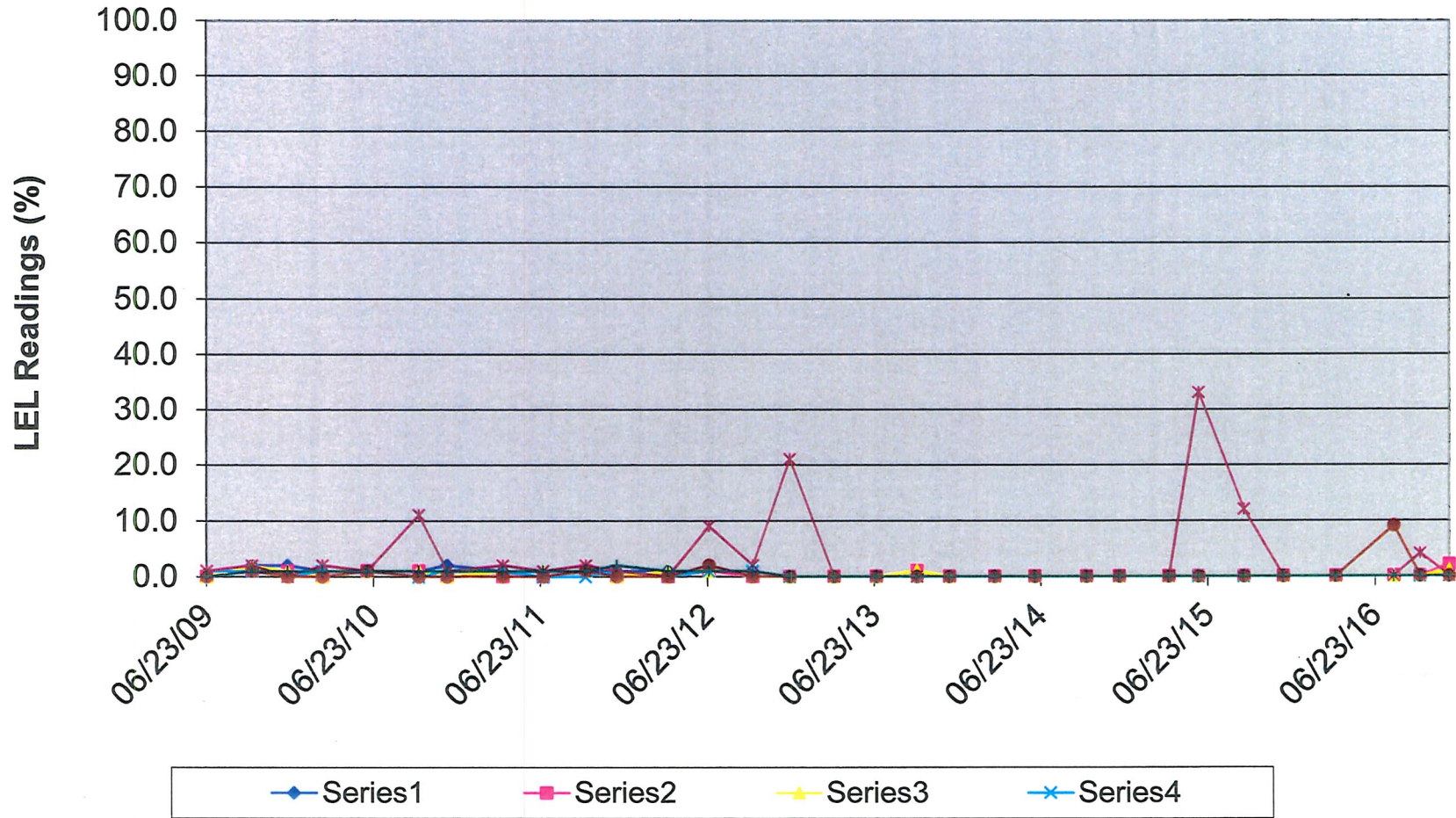


**BRAUN™**  
**INTERTEC**

OXYGEN TRENDS (PERCENT)  
Monthly Monitoring Report  
Onalaska Municipal Landfill  
Onalaska, Wisconsin

	DATE	SHEET
DRAWN BY: DMB	3/26/2008	
APP'D BY: MLG	3/26/2008	OF
JOB NO. LC-07-04279		
DWG. NO.	FIGURE NO.	1
SCALE		

## LEL Levels



**BRAUN™**  
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**LEL TRENDS (PERCENT)**  
Monthly Monitoring Report  
Onalaska Municipal Landfill  
Onalaska, Wisconsin

		DATE	SHEET
DRAWN BY:	DMB	3/26/2008	
APP'D BY:	MLG	3/26/2008	OF
JOB NO.	LC-07-04279		
DWG. NO.			FIGURE NO.
SCALE			2

**Onalaska Municipal Landfill  
LC-07-04279**

**TABLE 1A  
Landfill Gas Monitoring**

Site Visit Date	Oxygen Readings (%) Gas Monitoring Points						
	LG-1	LG-2	LG-3	LG-4	LG-5	LG-6	LG-7
05/09/97	18.8	20.2	20.1	20.9	20.8	20.8	20.7
06/18/97	19.9	20.9	20.7	20.7	19.9	20.9	20.9
07/16/97	15.8	19.3	19.0	18.9	11.7	20.8	11.4
08/14/97	12.7	18.6	17.7	0.6	0.0	7.0	2.1
09/18/97	10.0	17.1	15.6	11.7	0.0	11.2	8.1
10/28/97	14.3	18.9	19.3	20.5	19.4	20.9	20.9
11/24/97	17.4			20.9	20.9	20.9	20.9
12/16/97	18.1	19.8	20.1	17.2	20.8	20.9	20.9
01/19/98	19.6			20.8	20.7	20.9	20.9
02/27/98	19.0	20.6	20.3	17.9	18.3	20.5	20.8
03/23/98	19.4	20.5	20.2	20.6	20.7	20.7	20.8
04/14/98	19.2	20.3	20.5	20.9	20.9	20.9	20.6
05/15/98	18.6	19.8	19.9	19.9	18.6	20.7	20.4
06/23/98	20.2	20.3	20.4	19.9	19.2	19.9	17.8
07/14/98	13.7	18.4	13.7	20.5	20.5	19.8	20.5
08/12/98	11.4	18.0	16.6	18.4	16.0	17.8	1.0
09/17/98	10.6	17.4	16.1	19.6	17.5	19.9	14.4
10/14/98	13.6	18.7	17.7	18.3	4.5	17.4	19.1
11/17/98	14.8	19.4	18.7	20.9	20.8	20.4	17.8
12/23/98				20.8	20.1	20.9	20.8
01/15/99	18.6			0.0	0.1	8.7	18.1
02/12/99	19.8	20.9		18.8	18.3	20.1	20.9
03/12/99	19.6	20.5		17.2	13.9	19.5	20.4
04/09/99	19.2	20.5	20.8	20.7	20.7	20.4	20.8
05/07/99	19.0	20.4	20.5	20.8	20.7	20.8	20.8
06/10/99	15.8	19.8	20.1	20.2	19.6	20.4	15.8
07/06/99	16.1	19.1	19.0	20.9	20.9	20.6	20.9
08/16/99	13.3	17.6	17.1	20.5	19.2	17.3	20.2
09/13/99	12.8	18.3	17.3	20.7	18.4	19.9	18.7
10/20/99	15.6	19.6	19.0	18.8	7.8	17.8	19.9
11/30/99	18.2	20.7	20.1	9.3	16.9	19.3	19.3
12/23/99	19.0	20.9		19.0	14.4	20.4	19.2
01/18/00	20.0			19.2	15.0	20.8	20.9
02/18/00	19.9			18.3	19.3	20.9	20.8
03/24/00	20.2	20.7	20.7	20.0	19.8	20.7	20.9
04/24/00	20.9	20.7	20.5	5.2	19.2	19.6	17.7
05/23/00	19.1	20.7	20.3	20.4	20.4	20.1	
06/15/00	17.8	19.5	19.4	20.9	20.8	19.8	20.8
07/21/00	15.1	20.9	17.8	20.8	20.6	20.7	20.2
08/15/00	13.2	18.8	17.6	20.7	20.8	20.7	20.9
09/19/00	16.3	18.9	18.2	20.9	20.9	20.9	20.7
10/26/00	15.0	19.9	19.0	6.4	18.6	7.1	19.5
12/28/00	19.7	19.7	18.9	19.5	19.7	19.7	19.2
03/20/01	20.8	20.8	20.7	20.9	20.6	20.7	20.8
06/20/01	20.7	20.7	20.9	20.8	20.7	20.8	20.8
07/30/01	20.8	20.9	20.9	20.8	20.8	20.9	20.8
08/28/01	20.9	20.2	20.5	18.6	20.1	19.1	20.9
09/26/01	20.8	20.9	20.8	20.8	20.9	20.9	20.9
10/29/01	20.9	20.7	20.7	20.2	20.7	20.6	20.8
12/04/01	20.8	20.8	20.9	20.8	20.9	20.7	20.9
03/29/02	20.9	20.9	20.8	20.9	20.8	20.8	20.8

**Onalaska Municipal Landfill  
LC-07-04279**

**TABLE 1A  
Landfill Gas Monitoring**

Site Visit Date	Oxygen Readings (%) Gas Monitoring Points						
	LG-1	LG-2	LG-3	LG-4	LG-5	LG-6	LG-7
06/07/02	20.9	20.3	20.9	14.2	14.3	19.6	19.0
07/18/02	20.9	20.9	20.9	18.6	18.2	20.8	20.9
08/15/02	14.5	20.9	18.6	18.2	11.4	18.3	16.8
10/10/02	14.5	21.7	19.9	9.4	3.8	12.5	17.1
12/11/02	19.9	20.7	19.7	18.3	18.9	20.7	20.9
03/31/03	20.4	20.9	21.0	7.3	18.0	17.6	17.5
06/30/03	20.9	20.8	20.8	20.7	19.9	20.9	20.9
07/30/03	20.8	20.7	20.3	18.6	19.2	20.8	20.8
08/21/03	18.7	19.2	16.4	17.3	18.6	19.7	19.9
09/30/03	18.2	19.6	14.4	20.9	20.0	20.9	20.6
10/30/03	18.9	19.4	15.3	21.3	20.1	20.6	20.4
12/18/03	20.9	20.9	18.7	19.5	20.9	20.7	20.9
03/25/04	20.8	19.8	15.8	18.9	20.2	20.9	20.6
06/18/04	20.8	20.7	17.6	19.4	19.7	20.9	20.0
07/20/04	20.9	20.9	18.2	20.1	18.6	19.8	20.4
08/19/04	20.9	20.8	20.1	17.6	20.1	20.6	20.9
09/23/04	20.9	20.9	20.8	20.7	20.8	20.9	20.9
10/15/04	20.9	20.9	20.9	20.8	20.9	20.9	20.9
12/10/04	20.8	20.7	20.6	19.9	20.2	20.7	20.8
01/31/05	20.9	20.8		20.1		20.8	20.9
03/08/05	20.9	20.9	20.8	15.6	18.9	19.7	20.8
06/27/05	20.9	20.9	20.4	18.9	20.2	20.8	20.9
07/19/05	18.8	20.7	20.9	20.7	14.1	20.2	20.9
08/23/05	17.2	20.2	18.1	18.7	20.1	17.4	16.7
09/26/05	12.1	18.1	16.2	16.3	5.3	20.2	16.9
10/13/05	13.2	18.4	16.8	19.9	19.2	12.9	12.9
03/06/06	20.1	20.9	20.9	20.9	20.9	20.9	20.5
06/30/06	17.9	20.5	19.4	20.9	20.9	20.7	20.3
09/21/06	15.4	18.9	17.2	19.6	16.6	19.5	19.3
12/29/06	18.2	20.6	20.1	20.3	19.2	20.9	20.2
03/31/07	19.3	20.4	20.5	20.6	20.2	20.2	19.3
06/21/07	17.7	19.2	20.1	20.8	19.9	20.4	17.5
09/28/07	13.8	18.4	17.2	20.4	19.5	20.9	16.8
12/31/07	20.9	20.9	21.0	20.8	20.6	20.9	21.0
03/26/08	20.0	20.9	20.8	20.9	20.9	20.9	20.9
06/26/08	18.3	19.8	20.0	20.1	19.7	20.9	18.5
09/12/08	15.9	19.9	18.6	19.6	16.1	19.7	18.6
12/18/08	19.9	20.9	20.8	20.6	18.7	20.9	20.5
03/31/09	20.2	20.9	20.9	19.6	19.3	20.9	20.5
06/23/09	18.4	19.6	19.0	19.3	19.0	20.9	18.3
09/30/09	14.2	18.8	16.8	19.6	15.1	19.6	18.7
12/17/09	18.1	20.4	20.7	20.9	20.8	20.9	19.8
03/03/10	19.8	20.9	20.9	18.9	15	20.7	20.5
06/09/10	18.7	20.2	19.5	19.2	19.9	20.1	18.8
09/30/10	14.5	19.1	17.4	20.9	3.3	19.6	16.2
12/01/10	17.8	20.9	21.0	20.4	19.8	20.9	20.4
04/02/11	19.9	20.8	20.5	19.5	16.6	20.7	20.2

**Onalaska Municipal Landfill  
LC-07-04279**

**TABLE 1B  
Landfill Gas Monitoring**

Site Visit Date	LEL Readings (%) Gas Monitoring Points						
	LG-1	LG-2	LG-3	LG-4	LG-5	LG-6	LG-7
05/09/97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/18/97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/16/97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/14/97	0.0	0.0	0.0	3.0	5.0	0.0	0.0
09/18/97	0.0	0.0	0.0	1.0	3.0	0.0	9.0
10/28/97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/24/97	0.0			0.0	0.0	0.0	0.0
12/16/97	0.0	0.0	0.0	0.0	0.0	0.0	0.0
01/19/98	0.0			0.0	0.0	0.0	0.0
02/27/98	0.0	0.0	0.0	15.0	18.0	0.0	0.0
03/23/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04/14/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/15/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/23/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/14/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/12/98	0.0	0.0	0.0	3.0	20.0	0.0	7.0
09/17/98	0.0	0.0	0.0	0.0	3.0	0.0	0.0
10/14/98	0.0	0.0	0.0	0.0	50.0	0.0	0.0
11/17/98	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12/23/98				0.0	0.0	0.0	0.0
01/15/99	0.0			4.0	11.0	12.0	2.0
02/12/99	0.0	0.0		0.0	0.0	0.0	0.0
03/12/99	0.0	0.0		0.0	0.0	0.0	0.0
04/09/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/07/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/10/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/06/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/16/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09/13/99	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/20/99	0.0	0.0	0.0	0.0	30.0	0.0	0.0
11/30/99	0.0	0.0	0.0	57.0	3.0	0.0	0.0
12/23/99	0.0	0.0		0.0	8.0	0.0	0.0
01/18/00	0.0			0.0	0.0	0.0	0.0
02/18/00	0.0			0.0	0.0	0.0	0.0
03/24/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04/24/00	0.0	0.0	0.0	58.0	0.0	0.0	0.0
05/23/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/15/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/21/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/15/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09/19/00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/26/00	0.0	0.0	0.0	49	1.0	0.0	0.0
12/28/00	0.0	0.0	0.0	0.0	1.0	0.0	0.0
03/20/01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/20/01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/30/01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/28/01	0.0	0.0	0.0	14.0	1.0	1.0	0.0
09/26/01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/29/01	0.0	0.0	0.0	2.0	0.0	1.0	0.0
12/04/01	0.0	0.0	0.0	0.0	0.0	1.0	0.0
03/29/02	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**TABLE 1B  
Landfill Gas Monitoring**

Site Visit Date	LEL Readings (%) Gas Monitoring Points						
	LG-1	LG-2	LG-3	LG-4	LG-5	LG-6	LG-7
06/07/02	0.0	0.0	0.0	21.0	15.0	1.0	1.0
07/18/02	0.0	0.0	0.0	12.0	8.0	0.0	0.0
08/15/02	2.0	0.0	1.0	11.0	15.0	1.0	2.0
10/10/02	2.0	0.0	2.0	100.0	100.0	45.0	2.0
12/11/02	1.0	0.0	2.0	1.0	2.0	0.0	3.0
03/31/03	1.0	0.0	0.0	57.0	27.0	3.0	14.0
06/30/03	0.0	0.0	0.0	0.0	0.1	0.0	0.0
07/30/03	0.0	0.0	0.0	12.0	7.0	0.0	0.0
08/21/03	0.0	0.0	3.0	5.0	1.0	0.0	0.0
09/30/03	3.0	2.0	3.0	0.0	2.0	0.0	2.0
10/30/03	0.0	1.0	0.0	3.0	1.0	0.0	0.0
12/18/03	0.0	0.0	1.0	1.0	0.0	0.0	0.0
03/25/04	0.0	0.0	3.0	1.0	1.0	0.0	0.0
06/18/04	0.0	1.0	2.0	0.0	0.0	0.0	0.0
07/20/04	0.0	0.0	1.0	1.0	1.0	0.0	0.0
08/19/04	0.0	0.0	1.0	0.0	1.0	0.0	0.0
09/23/04	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/15/04	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12/10/04	0.0	0.0	0.0	0.0	0.0	0.0	0.0
01/31/05	0.0	0.0		0.0		0.0	0.0
03/08/05	0.0	1.0	1.0	7.0	12.0	1.0	0.0
06/27/05	0.0	0.0	0.0	4.0	2.0	0.0	0.0
07/19/05	2.0	0.0	0.0	0.0	2.0	1.0	0.0
08/23/05	2.0	0.0	1.0	1.0	0.0	2.0	2.0
09/26/05	3.0	1.0	2.0	17.0	100.0	0.0	2.0
10/13/05	2.0	1.0	2.0	1.0	17.0	2.0	2.0
03/06/06	2.0	1.0	0.0	0.0	0.0	0.0	2.0
06/30/06	2.0	1.0	2.0	1.0	1.0	0.0	1.0
09/21/06	2.0	1.0	2.0	1.0	5.0	1.0	1.0
12/29/06	1.0	1.0	1.0	0.0	1.0	0.0	1.0
03/31/07	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/21/07	1.0	0.0	0.0	0.0	1.0	0.0	1.0
09/28/07	1.0	1.0	1.0	1.0	1.0	0.0	2.0
12/31/07	0.0	0.0	0.0	0.0	0.0	0.0	1.0
03/26/08	1.0	0.0	1.0	1.0	0.0	1.0	1.0
06/26/08	1.0	0.0	1.0	0.0	1.0	0.0	1.0
09/12/08	1.0	0.0	0.0	0.0	2.0	0.0	1.0
12/18/08	0.0	0.0	0.0	0.0	2.0	0.0	1.0
03/31/09	0.0	0.0	0.0	1.0	1.0	0.0	0.0
06/23/09	0.0	0.0	0.0	1.0	1.0	0.0	0.0
09/30/09	2.0	1.0	2.0	1.0	2.0	1.0	1.0
12/17/09	2.0	1.0	1.0	0.0	0.0	0.0	1.0
03/03/10	1.0	0.0	0.0	1.0	2.0	0.0	1.0
06/09/10	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09/30/10	1.0	1.0	1.0	0.0	11.0	0.0	1.0
12/01/10	2.0	0.0	0.0	1.0	1.0	0.0	1.0
4/2/2011	1.0	0.0	1.0	1.0	2.0	0.0	1.0

**TABLE 1B**  
**Landfill Gas Monitoring**

LEL Readings (%)

Site Visit Date	Gas Monitoring Points						
	LG-1	LG-2	LG-3	LG-4	LG-5	LG-6	LG-7
06/29/11	0.0	0.0	1.0	0.0	1.0	0.0	1.0
09/30/11	1.0	1.0	1.0	0.0	2.0	1.0	1.0
12/07/11	1.0	0.0	0.0	1.0	1.0	0.0	2.0
03/28/12	1.0	0.0	1.0	0.0	0.0	0.0	1.0
06/26/12	1.0	1.0	1.0	1.0	9.0	2.0	1.0
09/30/12	1.0	0.0	1.0	1.0	2.0	0.0	1.0
12/20/12	0.0	0.0	0.0	0.0	21.0	0.0	0.0
03/27/13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/28/13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09/25/13	1.0	1.0	1.0	0.0	0.0	0.0	0.0
12/05/13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03/14/14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/10/14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/01/14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12/12/14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03/30/15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/03/15	0.0	0.0	0.0	0.0	33.0	0.0	0.0
09/10/15	0.0	0.0	0.0	0.0	12.0	0.0	0.0
12/05/15	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03/29/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/03/16	0.0	0.0	0.0	0.0	0.0	9.0	0.0
09/29/16	0.0	0.0	0.0	0.0	4.0	0.0	0.0
12/02/16	2.0	2.0	1.0	0.0	0.0	0.0	0.0



Landfill Gas Monitoring  
LC-07-04279A  
Town of Onalaska

Date: 12/02/16  
Technician: David Bradst  
Weather: overcast  
breezy  
34°F

Well Number	Time Monitored	Oxygen Readings	LEL Readings	Coments
LG-1	13:10	17.6	2.0	
LG-2	13:18	19.9	2.0	
LG-3	13:28	19.7	1.0	
LG-4	13:36	20.3	0.0	
LG-5	12:35	18.5	0.0	
LG-6	12:45	19.5	0.0	
LG-7	13:00	18.6	0.0	

Additional Notes

Instrument used: MSA Orion 4-gas meter (#65)

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