

CON 12-15 Doc #16517 CL 11/5/02

CON 12:15 SIMPLOT-

2001 JUL 30 P 12:

July 18, 2001

Dr. Calvin Lundberg
Solid Waste Section
Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319

MW #1912160.0101

RE: Sixth Annual Groundwater Sampling Results
J.R. Simplot Company Facility
Sac City, Iowa

Dear Dr. Lundberg:

This letter documents results from the sixth annual groundwater sampling event completed at the J.R. Simplot Company (Simplot) Sac City, Iowa facility. Simplot initiated annual groundwater monitoring in 1996, following one year of quarterly monitoring. A revised sampling network consisting of MW-4, MW-5, and MW-8 was agreed to in a May 14, 1998 meeting between Simplot and the Iowa Department of Natural Resources (IDNR). Monitoring well locations are shown in Figure 1. The site is currently closed and no agricultural chemicals are stored at the facility.

Monitoring wells that were not part of the revised monitoring network were properly abandoned in 1998. Documentation of well abandonment was provided to the IDNR previously.

On June 12, 2001 personnel from Simplot and Montgomery Watson Harza (MWH) were on site to collect groundwater samples from monitoring wells included in the revised monitoring network. Due to difficulty the laboratory had when analyzing nitrogen phosphorous pesticides in the samples collected from MW-4 and MW-8, MWH personnel revisited the site on June 28, 2001 to resample groundwater from these wells.

#### **Groundwater Flow Directions**

Water table elevations were measured at three wells (MW-4, MW-5, and MW-8) and recorded prior to purging the wells in preparation for sampling. Figure 1 presents groundwater contours constructed using this data. Based on the groundwater elevations at these three wells, shallow groundwater flow during the sampling event appears to have

Tel: 515 253 0830

Fax: 515 253 9592

been influenced by the drainage tile inlet located near MW-4. During relatively dry periods the tile inlet probably drains a localized area creating a slight depression in the shallow water table resulting in radial flow toward the inlet area. During past groundwater monitoring events, which included water level measurements from additional wells on site, shallow groundwater flow was generally southeast or southwest, again with localized influence in the area around MW-4 and the tile inlet. A summary page of groundwater monitoring well gauging data is provided in Attachment A.

#### **Groundwater Sample Collection**

Prior to collecting samples for laboratory analysis, approximately three well volumes of water were purged from each well in order to ensure a representative sample. Purging and sampling were conducted using dedicated Waterra foot valves and high density polyethylene (HDPE) tubing. Disposable nitrile gloves were worn and changed between wells during purging and sampling activities to prevent cross-contamination.

All water samples were properly preserved on ice in coolers and submitted, along with chain-of-custody documentation, to Keystone Laboratories, Inc. (Keystone) in Newton, Iowa for analyses. Analytes for MW-4 and MW-8 consisted of nitrate-nitrogen, and nitrogen and phosphorous insecticides and herbicides. MW-5 was analyzed for nitrate-nitrogen only. Analyses were conducted using IDNR and United States Environmental Protection Agency-approved analytical methods. Current and prior laboratory results are summarized in Table 1. IDNR action levels are also included for reference. Copies of laboratory analytical reports and associated chain-of-custody documentation are provided in Attachment B.

#### **Evaluation of Analytical Data**

The following lists the monitoring well(s), and trends for those analytes, which exceeded the corresponding IDNR action level during the 2001 sampling event:

- Alachlor in MW-4 and MW-8: Concentrations in MW-4 and MW-8 continue to exceed the IDNR action level, but exhibit steady to declining trends.
- Cyanazine in MW-4 and MW-8: Cyanazine concentrations in MW-4 and MW-8 continue to exceed the IDNR action level, but exhibit steady to declining trends.

- Metolachlor in MW-4: The metolachor concentrations in MW-4 have been relatively stable since 1999 at levels exceeding the IDNR action level. The levels at MW-8 have been below the IDNR action level since 1996 and demonstrate an overall declining trend.
- <u>Nitrate-Nitrogen in MW-4, MW-5, and MW-8</u>: Nitrate-nitrogen levels continue to exceed IDNR action levels in MW-4, MW-5, and MW-8. The concentration at MW-4 increased relative to the 2000 sampling event, while the nitrate-nitrogen levels in MW-5 and MW-8 were comparable to levels in the 2000 sampling event.

If you have any questions concerning these sampling results, please contact Ed Cranson of Simplot at 970-542-0034, Mike Geringer, or me.

Sincerely,

Rob Malcomson

Project Manager

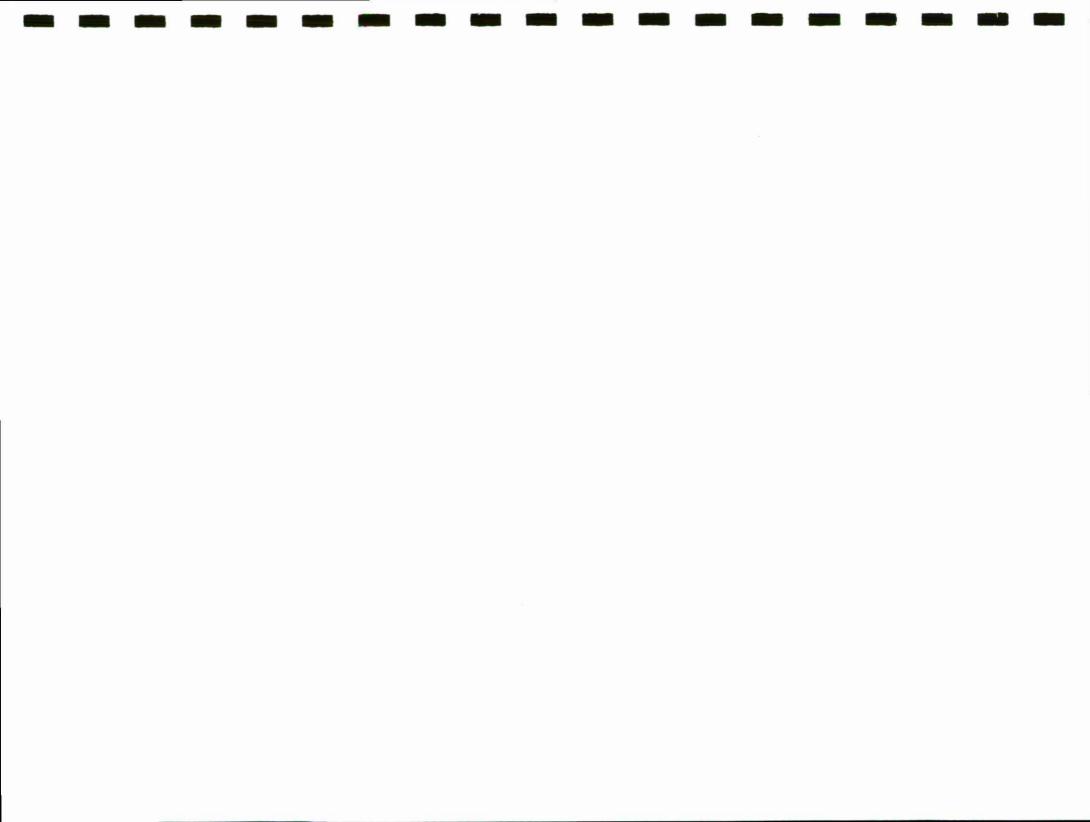
/rsm:vas
Attachments

cc: Ed Cranson, J.R. Simplot Company

TABLE 1 GROUNDWATER ANALYTICAL RESULTS J.R. SIMPLOT COMPANY SAC CITY, IOWA

Well No.	Date	Alachlor (Lasso) <sup>a</sup> (µg/L)	Atrazine (Aatrex) (µg/L)	Cyanazine (Bladex) (µg/L)	EPTC (Eradicane) (µg/L)	Metolachlor (Dual) (mg/L)	Nitrogen Nitrate <sup>b</sup> (mg/L)
MW-4	05-02-90	460	29	400	47	1,100	150
	07-16-91	220	5.2	51	13	490	88
	11-10-92	288	18.4	80.9	26.5	735	29
	02-21-94	170	13.1	20.1	21.8	525	42
	05-17-95	70.8	9.6	15.2	12.3	445	64
	08-28-95	150	11	14.5	9.0	615	59.1
	11-09-95	115	10.1	2.2	16.3	478.8	49.8
	Duplicate	87.2	10.1	12.9	16.4	324.7	50
	02-22-96	103.	7.9	15.3	15.9	495	59
	Duplicate	108	7.68	14.9	15.6	500	55
	06-29-96	71.3	7.9	12.5	7.9	614	99.2
	Duplicate	63.8	8.1	13.4	8.5	574	98.7
	6-11-97	80.9	6.4	9.2	16.7	676	100
	04-01-98	100	3.9	5.9	16.5	1190	170
	06-23-99	21.4	3.0	5.9	4.7	231	50
	06-14-00	57.1	4.05	7.87	13.2	375	63
	06-12-01	20.5	1.5	4.2	8.4	248	152
MW-5	05-02-90	5.9	<1.9	3.3	<14	<1.9	200
	07-16-91	130	2.8	4	<10	160	210
	11-10-92	74.3	5.9	15.1	1.7	44.7	320
	02-21-94	9.4	0.7	< 0.1	0.4	16.9	11
	05-17-95	80.1	4	8	6	141	159
	08-28-95	40.4	2.1	0.9	0.4	36.6	311
	Duplicate	40.4	2.1	0.9	0.4	36.4	307
	11-09-95	32	3	1.9	0.9	30.9	212.4
	02-22-96	10.7	1.2	0.8	0.6	37.2	155
NR Action	Levels <sup>c</sup>	0.4	3.0	1.0	200.0	100.0	10.0
	7 7 1	2/44	3/1200	1/70		70/157.00	10/-/

70/5300 10/56



#### TABLE 1 (CONTINUED)

# GROUNDWATER ANALYTICAL RESULTS J.R. SIMPLOT COMPANY SAC CITY, IOWA

Well No.	Date	Alachlor (Lasso)* (µg/L)	Atrazine (Aatrex) (µg/L)	Cyanazine (Bladex) (µg/L)	EPTC (Eradicane) (µg/L)	Metolachlor (Dual) (mg/L)	Nitrogen Nitrate <sup>b</sup> (mg/L)
MW-5	06-29-96	34	1.6	1.1	0.5	81.6	77
(Continued)	06-11-97	12.7	1	0.3	0.2	24.9	220
	04-01-98	6	0.4	< 0.1	0.2	7.7	350
	Duplicate	6	0.4	< 0.1	0.2	8.4	350
	06-23-99	-	_	-	-	_	57.4
	06-14-00	-	-	-	-	-	141
	06-12-01	-	-	-	1-	-	146
MW-8	11-10-92	75.6	5.5	64.6	3.9	139	21
	Duplicate	76.0	5.2	62.2	3.5	140	21
	02-21-94	32.8	6.4	16.8	3.7	93.1	28
	05-17-95	9.2	2.3	9.6	0.8	56.3	48
	Duplicate	10.1	2.5	10.1	0.8	56.7	50
	08-28-95	19.3	4.0	12.7	1.1	137	30.8
	11-09-95	21.1	8.1	13.2	1.2	90.8	26.2
	02-22-96	14.5	3.67	10.2	1.1	143	35
	06-29-96	3.4	< 0.1	6.7	0.4	113	25
	06-11-97	8	2.3	5.2	0.5	56.5	43
	04-01-98	3.7	1.9	6.4	0.4	71	33
	06-23-99	5.6	< 0.1	5.7	1.3	90.9	35.5
	06-14-00	4.3	1.47	4.96	2.43	65.9	38
	06-12-01	1.8	0.6	2.8	0.6	39.1	23.0
ONR Action Lev	vels°	0.4	3.0	1.0	200.0	100.0	10.0

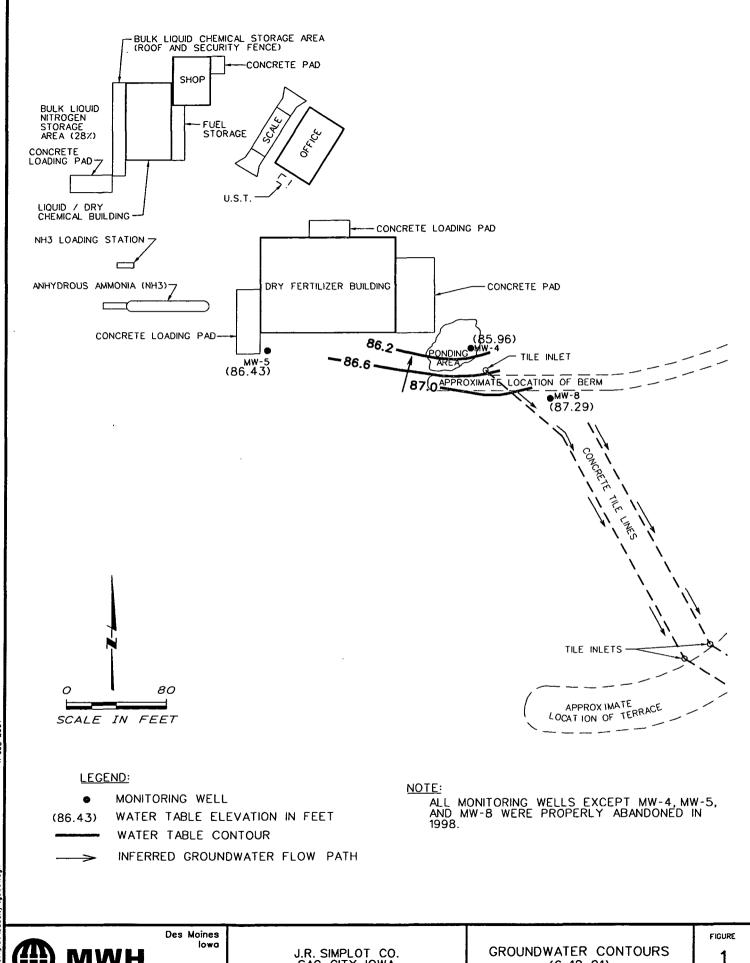
Note: Highlighted entries indicate concentrations above Iowa Department of Natural Resources (IDNR) Action Levels.

<sup>&</sup>lt;sup>a</sup> Units of μg/L are an equivalent of units of parts per billion (ppb).

Units of mg/L are an equivalent of units of parts per million (ppm).

State action levels as established in Chapter 567—133 (455B, 455E) of the <u>Iowa Administrative Code</u>.

Not analyzed for this parameter.

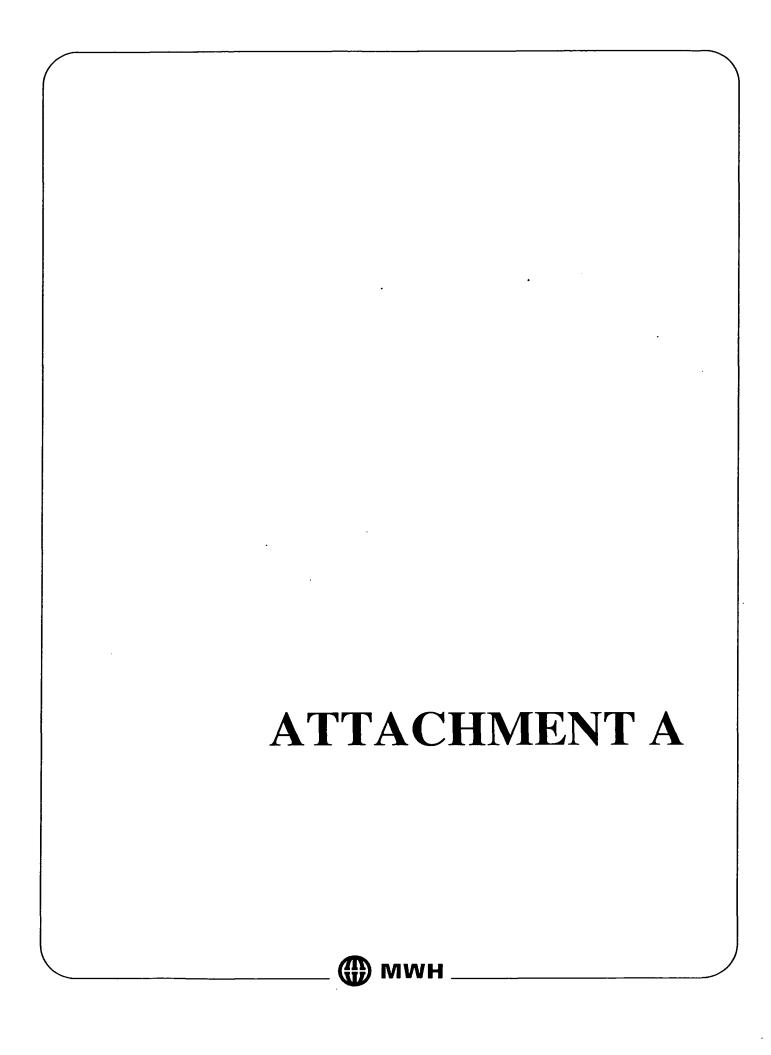


MONTGOMERY WATSON HARZA

J.R. SIMPLOT CO. SAC CITY, IOWA

(6-12-01)

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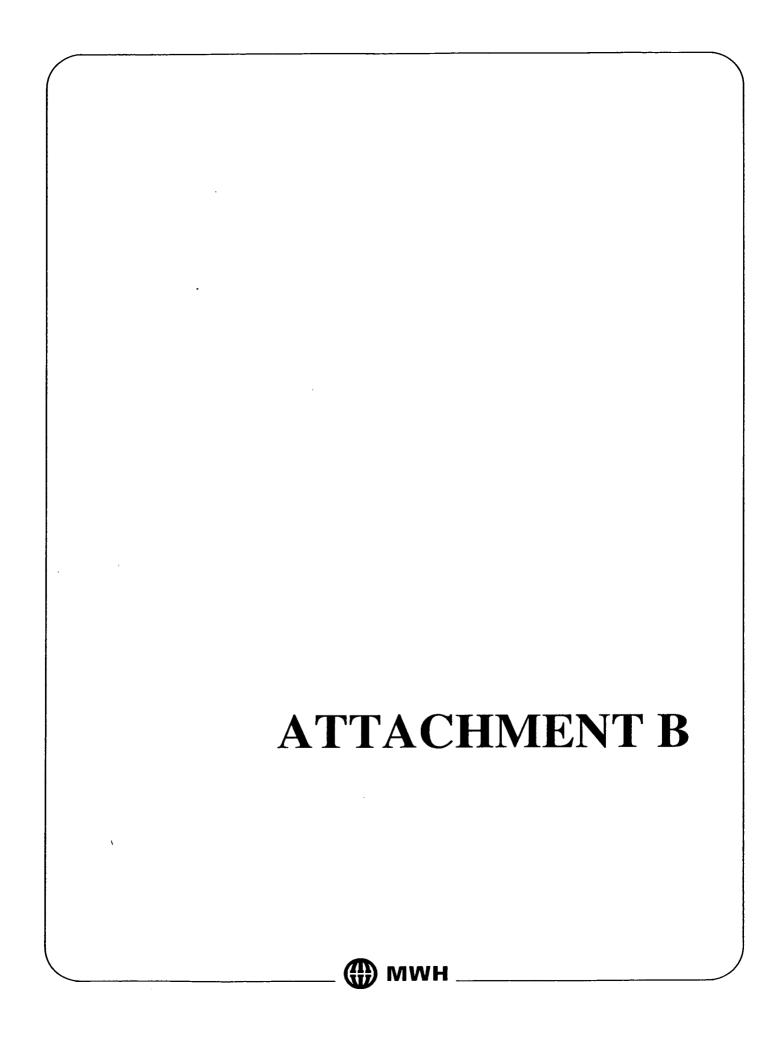


# Groundwater Elevations for Simplot - Sac City, Iowa

	SWL TAKE	N ON										
		2/22/96		6/29/96		6/11/97		4/1/98		6/23/99		6/14/00
	DTW	Water Elev										
MW-4	13.37	85.67	6.15	92.89	11.04	88.00	13.52	85.52	19,80	79.24	14.84	84.20
MW-5	12.36	86.12	5.68	92.80	9.95	88.53	12.43	86.05	18.20	80.28	14.82	83.66
MW-8	11.28	86.32	4.26	93.34	8.77	88.83	10.06	87.54	21.20	76.40	12.12	85.48
	Average	86.04	Average	93.01	Average	88.45	Average	86.37	Average	78.64	Average	84.45

	SWL TAKE	N ON
		6/12/01
	DTW	Water Elev
MW-4	13.08	85.96
MW-5	12.05	86.43
MW-8	10.31	87.29
	Average	86.56

SWL = Static Water Level DTW = Depth to Water









### ANALYTICAL REPORT

July 12, 2001 Page 1 of 3

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Report To

Work Order: 11F1089

Mike Geringer Montgomery-Watson 11153 Aurora Avenue Des Moines, IA 50322

Project: Simplots

Project Number: Simplot Sac City Site

#### Work Order Information

Date Received: 06/29/2001 11:45AM Collector: Michael Geringer Collector Phone: 515-253-0830

PO Number:

Analyte		Result	t MR	L Method	Analyst Analyzee	d Qualifier
11F1089-01	MW-4			Matrix: Water	Collected:	06/28/01 11:35
EPTC		8.4 ı	ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Butylate		0.6 เ	ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Propachlor		0.3 ι	ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Trifluralin		0.3 ι	ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Terbufos		0.2 ι	ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Atrazine			ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Simazine		0.1 u		EPA 8141	EPP 07/06/01	
Alachlor			ug/l 0.1	EPA 8141	EPP 07/06/01	2:31
Metribuzin			ug/l 0.1	EPA 8141	EPP 07/06/01	
Metolachlor			ug/l 5.0	EPA 8141	EPP 07/10/01	
Pendimethalin			ug/l 0.5	EPA 8141	EPP 07/06/01	
Butachlor			1g/l 0.5	EPA 8141	EPP 07/06/01	2:31
Cyanazine		<b>4.2</b> u		EPA 8141	EPP 07/06/01	
Surrogate: 2-Nitro-m	1-xylene	93.70 %	6	66-127	EPP 07/06/01	2:31
11F1089-02	MW-8			Matrix: Water	Collected:	06/28/01 11:55
EPTC		0.6 u	ıg/l 0.1	EPA 8141	EPP 07/06/01	3:19
Butylate		<b>0.2</b> u		EPA 8141	EPP 07/06/01	3:19
Propachlor			ng/l 0.1	EPA 8141	EPP 07/06/01	3:19
Trifluralin		0.3 u	ıg/l 0.1	EPA 8141	EPP 07/06/01	3:19
Terbufos			ıg/l 0.1	EPA 8141	EPP 07/06/01	3:19
Atrazine		0.6 u	ıg/l 0.1	EPA 8141	EPP 07/06/01	3:19
Simazine			ig/l 0.1	EPA 8141		3:19
Alachlor			ıg/l 0.1	EPA 8141	EPP 07/06/01	3:19
Metribuzin		0.8 u	0	EPA 8141	EPP 07/06/01	3:19
Metolachlor			ıg/l 0.5	EPA 8141	EPP 07/06/01	3:19
Pendimethalin		<0.5 u	O .	EPA 8141		3:19
Butachlor		0.6 u	•	EPA 8141	EPP 07/06/01	3:19
Cyanazine		2.8 u	O .	EPA 8141		3:19
Surrogate: 2-Nitro-m	-xylene	96.85 %		66-127	EPP 07/06/01	
T	-					

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.







Montgomery-Watson 11153 Aurora Avenue Des Moines, IA 50322

Work Order: 11F1089

July 12, 2001

Page 2 of 3

# Determination of Nitrogen/Phosphorus Herbicides & Insecticides - Quality Control Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1G10221 - 3510C NP/OC S	Sep Fnl									
Blank (1G10221-BLK1)				Prepared:	07/02/01	Analyzed	: 07/06/01	•	•	
EPTC	ND	0.1	ug/l							
Butylate	ND	0.1								
Propachlor	ND	0.1	**							•
Trifluralin	ND	0.1	11							
Terbufos	ND	0.1	**							
Atrazine	ND	0.1	**							
Simazine	ND	0.1	IF.							
Alachlor	ND	0.1	**							
Metribuzin	ND	0.1								
Metolachlor	ND	0.5	"							
Pendimethalin	ND	0.5	**							
Butachlor	ND	0.5	"							
Cyanazine	ND	0.1	**							
Surrogate: 2-Nitro-m-xylene	11.1		"	11.5		96.52	66-127			
LCS (1G10221-BS1)				Prepared:	07/02/01	Analyzed	: 07/06/01			
Atrazine	9.7	0.1	ug/l	9.0		107.8	70-130			
Alachlor	9.7	0.1	**	9.2		105.4	70-130			
Metribuzin	10.7	0.1	"	9.4		113.8	70-130			
Metolachlor	8.0	0.5	**	7.8		102.6	70-130			
Surrogate: 2-Nitro-m-xylene	11.1		<i>n</i>	11.5		96.52	66-127			
LCS Dup (1G10221-BSD1)				Prepared:	07/02/01	Analyzed	: 07/06/01			
Atrazine	9.0	0.1	ug/l	9.0		100.0	70-130	7.49	20	
Alachlor	9.1	0.1	"	9.2		98.91	70-130	6.38	20	
Metribuzin	10.1	0.1	**	9.4		107.4	70-130	5.77	20	
Metolachlor	7.4	0.5	**	7.8		94.87	70-130	7.79	20	
Surrogate: 2-Nitro-m-xylene	10.8		"	11.5		93.91	66-127			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.







Montgomery-Watson 11153 Aurora Avenue Des Moines, IA 50322

Work Order: 11F1089

July 12, 2001

Page 3 of 3

End of Report

Keystone Laboratories, Inc.

Ericka Weintz Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

#### CHAIN OF CUSTODY RECORD

3012 Ansborough Ave.



600 E. 17<sup>th</sup> St. S. Newton, IA 50208 Phone: 641-792-8451

N, IA 50208 Waterloo, IA 50701 641-792-8451 Phone: 319-235-4440 641-792-7989 Fax: 319-235-2480 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856

Fax: 913-321-7937

PAGE\_\_\_OF\_\_\_

SAMPLER: MICHAEL SER, MERR
SITE NAME: BAC CARY BUTE

ADDRESS: MISS AURORA ABINE

CITY/ST/ZIP: SEE NO INER TA EOSEZ

PHONE: (615) 253-0830

REPORT TO:

NAME: MULLAGE GERIAGER

COMPANY NAME: MWH INC.

ADDRESS: 11153 AURORA AURONE

CITY/ST/ZIP: Des MOINES, FA 50322.
PHONE: (515) 253 0830

FAX: (515) 253-9592

BILL TO:
NAME:

COMPANY NAME:

ADDRESS:

CITY/ST/ZIP:

PHONE:

Keystone Quote No.:

(If Applicable)

				(0				ANA	LYSE	S REC	DUIR	ED	LAB USE	ONLY
	,			H KH	ļ	ш	22		ļ				LABORATORY WORK ORDER	10.
İ				CONTAINERS		OSIT	-HERBIODES						11F1089	
			•	NO.		MP.	夏夏						SAMPLE TEMPERATURE UPON RECEIPT:	
	ш			P. O.	¥.	B/C	差						°C	LABORATORY SAMPLE
CLIENT SAMPLE NUMBER	DAT	TIME	SAMPLE LOCATION	Š.	MAT	GRA	_						CAMPIE CONDITION/COMMENTS	NUMBER
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	3/48/01	MIL. 22	MW-8	+	waw	9		-		+	1			0 4
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		-												
	-													
SAMPLE NUMBER			SAMPLE LOCATION  AW-4  AW-8	N N	mater MATRIX	D GR	42						SAMPLE CONDITION/COMMENTS	

				<u> </u>
Relinquished by: (\$ignature)	Date CX 01	Received by: (Signature)	Date	Turn-Around:
Made Stains	Time	7	Time	Standard Rush Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature)	Date 6/29/01 Time 1/145 Am	Remarks: Somples Re-Confered Due To Lab Edizar

#### RECEIVED



JUN 2 6 2001 MW / IOWA





# ANALYTICAL REPORT

Work Order: 11F0446

June 25, 2001 Page 1 of 1

Report To

Mike Geringer Montgomery-Watson 11153 Aurora Avenue

Des Moines, IA 50322

Project:

Simplots

Project Number:

Simplot Sites Sac City, IA

ormation

Date Received: 06/13/2001 10:40AM

Collector: Geringer, Mike Collector Phone: 515-253-0830

PO Number: .

	Result	MR	L Method	Analyst Anal	yzed Qualifier
MW-4			Matrix: Water	Collected	06/12/01 09:15
-	152 mg/l	5.0	EPA 9056	FIZ 06/13/0	1 16:42
MW-5			Matrix: Water	Collected	06/12/01 08:35
-	146 mg/l	5.0	EPA 9056	FIZ 06/13/0	1 16:56
MW-9			Matrix: Water	Collected	06/12/01 08:53
•	23.0 mg/l	0.5	EPA 9056	FIZ 06/13/0	1 17:10
	morganic Anions e  MW-5 morganic Anions e	MW-4 morganic Anions e 152 mg/l  MW-5 morganic Anions e 146 mg/l  MW-9 morganic Anions	MW-4 morganic Anions e 152 mg/l 5.0  MW-5 morganic Anions e 146 mg/l 5.0  MW-9 morganic Anions	MW-4  Matrix: Water  morganic Anions  e  152 mg/l  5.0 EPA 9056  MW-5  Matrix: Water  morganic Anions  e  146 mg/l  5.0 EPA 9056  MW-9  Matrix: Water  morganic Anions	MW-4  Matrix: Water Collected:  Morganic Anions  MW-5  Matrix: Water Collected:  MW-5  Matrix: Water Collected:  Morganic Anions  MW-9  Matrix: Water Collected:  MW-9  Matrix: Water Collected:  MW-9  Matrix: Water Collected:  Matrix: Water Collected:  MW-9  Matrix: Water Collected:

End of Report

Keystone Laboratories, Inc.

Jeffrey King, Ph.D.

President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

# **Veystone**

CITY/ST/ZIP: SAC CLLY

PRINT OR TYPE INFORMATION BELOW

ADDRESS:\_\_\_\_\_

PHONE: \_\_\_\_\_

600 E. 17<sup>th</sup> St. S. Newton, IA 50208

> Phone: 641-792-8451 Fax: 641-792-7989

☐ 3012 Ansborough Ave. Waterloo, IA 50701 Phone: 319-235-4440

Kansas City, KS 66103 Phone: 913-321-7856 Fax: 913-321-7937

Keystone Quote No.:\_\_\_

PAGE	OF

LABORATORIES, INC.

SAMPLER: MIKE BEZINGSE

SITE NAME: SIMPLOT - GOC CILY

**REPORT TO:** 

Fax: 319-235-2480

NAME: MYMASL GEZINGER

COMPANY NAME: MONTEONERY WATSON

ADDRESS: 11153 AURORA AUS

CITY/ST/ZIP: DES MOINES TA SOSZZ CITY/ST/ZIP:

PHONE: 515 753 -0850 FAX: 518253-9592

BILL TO: COMPANY NAME: ADDRESS: PHONE:

(If Applicable) ANALYSES REQUIRED LAB USE ONLY CONTAINERS LABORATORY WORK ORDER NO. GRAB/COMPOSITE 11 F0446 SAMPLE TEMPERATURE UPON RECEIPT: **LABORATORY** MATRIX °C SAMPLE NUMBER CLIENT SAMPLE NUMBER SAMPLE LOCATION SAMPLE CONDITION/COMMENTS 6/1/01 0915 01 SIMPLOT - SAC CULY MW-4 L/12/01 0835 X 02 MW-5 Jac Cut-Chila MW 9, 085 × • •

Relinquished by: (Signature)	Date	Received by: (Signature)	Date	Turn-Around:		
Man Jan	6/12/01 Time 12.05	-	Time	Standard	☐ Rush _	Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature)	Date 3-01 Time 10	Remarks:		