March 28, 2013

Walnutdale Dairy – CAFO

MIG010063

2013 Annual Report

Mr. Bruce Washburn MDEQ

Bruce,

Please find with this letter the information for the Walnutdale Dairy facility. These records were compiled with the help of [redacted] and accurately reflect the applications and management practices for this facility.

The following items are included in this report:

- 2012 Summary of Crops and Nutrient Balance
  - This worksheet is based off the new DEQ report form and includes 2012 crops, targeted and achieved yield goals, any manure applications that impacted the 2012 crop fertility and all commercial fertilizer inputs.
- Walnutdale Dairy 2012 Manure application summary showing 17,852,973 gallons of manure applied during 2012
- Soil test summary reflecting update soil tests.
- 2-8-13 Manure tests results
- 2013 Crop Plan & Recommendations
- 2013 Manure application planning calendar and spreadsheet showing 2013 applications
  - The application summary for 2013 attached utilizes 15,966,531 gallons

All records above were provided by and reviewed by [redacted] If there are questions on any of these items, please contact [redacted] or myself.

Respectfully,

Jason Stegink

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Walnutdale Dairy 2012 Summary of Crop & Nutrient Balance

			Soil Test (P)				Wet Tons/acre			Manure Data								
Field Name	Field ID	Acres	PPM	lbs/acre	2012 Crops	Yield Goal (/Acre)	Yields Achieved	Yield Units	Rate Gal/acre	Month - Year	Manure N (lb)	Manure P (lb)	Credits N (lb)	Fertilizer N (lb)	Fertilizer P (lb)	Total Crop N (lb)	Total P2O5 (lb)	Total P (lb)
Home 1	H1	25	121	242	Tritical & Silage Corn	9 & 20 Tons	8 & 18	tons	16500	Dec-'11	5	2	0	98	0	103	5	2
Home 2	H2	17	133	266	Tritical & Silage Corn	9 & 20 Tons	8 & 18	tons	0	0	0	0	9	98	0	107	0	0
Home 3	H3	24	124	248	Corn silage	20.0 Ton	13	tons	16500	Dec-'11	5	2	0	92	0	97	5	2
Home 4	H4A	18	86	172	Corn silage	20.0 Ton	13	tons	16500	Dec-'11	5	2	42	94	1	141	7	3
Home 4	H4B	19	108.5	217	Corn silage	20.0 Ton	13	tons	16500	Dec-'11	5	2	43	94	1	142	7	3
Home 4	H4C	16	83	166	Alfalfa topdress	7.0 Ton	11	tons	70000	Mar-Jun-'12	58	65	17	2	1	77	152	66
Home 4	H4D	17	82.5	165	Alfalfa topdress	7.0 Ton	11	tons	70000	Mar-Jun-'12	58	65	17	2	1	77	152	66
Home 5	H5	21	23.5	47	Corn silage	21.0 Ton	16	tons	25,750 & 31T	Sept-'11 to May-'12	441	139	36	92	0	569	318	139
Home 6	H6	22	26	52	Corn silage	21.0 Ton	16	tons	25,750 & 31T	Sept-'11 to May-'12	441	139	33	92	0	566	318	139
Home 7	H7	15	133	266	Corn silage	21.0 Ton	16	tons	31 ton	Dec-'11	434	135	36	92	0	562	310	135
Home 8	H8	14	128	256	Alfalfa topdress	6.0 Ton	9.5	tons	0	0	0	0	51	2	1	53	2	1
(b) (6)	H9	30	169	338	Tritical & Silage Corn	9 & 20 Tons	7 & 18	tons	0	0	0	0	16	82	0	98	0	0
(b) (6)	M13	23	45	90	1st Cutting - Silage	3 & 17 ton	3 & 12	tons	9652	May-'12	19	51	7	60	0	86	117	51
(b) (6) West	D14	25	51.5	103	Tritical & Silage Corn	9 & 20 Tons	8.7 & 11	tons	3125	Oct-'11	27	12	0	98	0	125	28	12
(b) (6) West	D15	20	54.5	109	Tritical & Silage Corn	9 & 20 Tons	8.7 & 11	tons	3125	Oct-'11	27	12	0	98	0	125	28	12
(b) (6) NW	D16	18	13	26	Corn silage	20.0 Ton	14	tons	0	0	0	0	5	104	0	109	0	0
(b) (6) Front	D17A	18	69	138	Alfalfa topdress	6.0 Ton	11.8	tons	7790	Jun-'12	3	2	51	2	1	56	7	3
(b) (6) front	D17B	20	69	138	Alfalfa topdress	6.0 Ton	11.8	tons	7790	Jun-'12	3	2	60	2	1	65	7	3
(b) (6) Back	D18	18	13	26	Corn silage	20.0 Ton	14	tons	0	0	0	0	9	104	0	113	0	0
(b) (6) Corn	D19	56.63	100.5	201	Corn silage	20.0 Ton	14	tons	43360	Sept-Dec-'11	84	46	48	92	0	224	106	46
(b) (6) back	ED20	19	42	84	Corn silage	20.0 Ton	14	tons	4000	Sept-'11	39	22	13	92	0	144	50	22
(b) (6) n of Dr	ED21A	22	61.5	123	Corn silage	20.0 Ton	15	tons	2960	Sept-'11	4	1	0	92	0	96	2	1
(b) (6) N of Dr	ED21B	23	66	132	Corn silage	20.0 Ton	15	tons	2960	Sept-'11	4	1	2	92	0	98	2	1
(b) (6) s of Dr	ED21C	20	10	20	Corn silage	20.0 Ton	15	tons	0	0	0	0	1	62	1	63	2	1
Wingers	W22A	20	76	152	Tritical & Silage Corn	9 & 20 Tons	7.5 & 16	tons	11	Nov-'11 & Apr-'12	185	66	81	98	0	364	152	66
Wingers	W22B	20	76	152	Tritical & Silage Corn	9 & 20 Tons	7.5 & 16	tons	19285	Nov-'11 & Apr-'12	185	66	81	98	0	364	152	66
(b) W north	K26A	6	17	34	Corn silage	17.0 Ton	12	tons	0	0	0	0	0	150	16	150	36	16
(b) (6)	K26B	3	9	18	Corn silage	17.0 Ton	12	tons	0	0	0	0	0	150	16	150	36	16
(b) (6) 146th	LM32	14	14.5	29	Corn silage	17.0 Ton	11	tons	0	0	0	0	0	122	0	122	0	0
(b) (6) (b)	JS33	23	33	66	Corn silage	20.0 Ton	13	tons	5380	Nov-'11	9	2	0	122	0	131	4	2
United Bank N	UB37A	22	30.5	61	Corn silage	20.0 Ton	10	tons	7065	Nov-'11	81	27	0	104	22	185	112	49
United Bank S	UB37B	22	32	64	Corn silage	20.0 Ton	10	tons	0	0	0	0	0	104	22	104	51	22
Wingers 14th	W38A	20	57	114	Corn silage	20.0 Ton	12	tons	4440	Mar-'12	35	24	3	92	0	130	56	24
Wingers 14th	W38B	20	57	114	Corn silage	20.0 Ton	12	tons	4440	Mar-'12	35	24	0	92	0	127	56	24
(b) (6) 134th	N40A	18	19.5	39	Alfalfa topdress	6.0 Ton	8	tons	15000	Nov-'11 & Apr-'12	62	47	0	2	1	64	110	48
(b) (6) 134th	N40B	15	19.5	39	Alfalfa topdress	6.0 Ton	8	tons	15000	Nov-'11 & Sep-'12	6	4	0	2	1	8	12	5
(b) (6) 135th	N40C	4	46	92	Corn silage	17.0 Ton	10	tons	0	0	0	0	0	153	17	153	40	17
(b) (6) N	E41	17	17.5	35	Corn silage	20.0 Ton	12	tons	0	0	0	0	7	102	22	109	51	22
(b) (6) 42	E42	45	35	70	Alfalfa topdress	6.0 Ton	8	tons	24,530	Apr-'12 to Sept-'12	58	63	8	2	1	68	147	64
(b) (6)	T43	13	106	212	Corn grain	140.0 Bu	8	tons	0	0	0	0	0	151	17	151	38	17
(b) (6)	T44	11	39	78	Corn grain	140.0 Bu	8	tons	0	0	0	0	0	151	17	151	38	17
(b) (6)	T45	12	101	202	Corn grain	140.0 Bu	8	tons	0	0	0	0	0	151	17	151	38	17
(b) (6) NW	J48	15	65.5	131	Corn silage	18.0 Ton	5	tons	21,800	Oct-'11 & Apr-'12	67	56	28	92	0	187	129	56
(b) (6) NW2	J49	14	107.5	215	Wheat - Wheat & Peas	9 & 18 Tons	24 & 2	bu & Tons	21800	Oct-'11 & Apr-'12	140	56	0	66	0	206	129	56
(b) (6) W	J50	28	86.5	173	Corn silage	18.0 Ton	5	tons	14800	Aug-'11	133	69	9	92	0	234	157	69
(b) (6) M	J51	68	125	250	Corn silage	18.0 Ton	4	tons	12650	Oct-'11 & Mar-'12	59	41	6	92	0	157	94	41
(b) (6) E	J52	38	60.5	121	Wheat - Wheat & Peas	60 & 3 T	39 & 2	bu & Tons	0	0	0	0	4	69	0	73	1	0
(b)	JS53	90	66	132	Alfalfa topdress	7.0 Ton	8	tons	15735	Mar-'12 to Jul-'12	13	28	9	1	0	23	66	29
Chesebro 40N	C65N	30	15.5	31	1st Cutting - Silage	3 & 18 Tons	2.5 & 18	tons	0	0	0	0	21	92	0	113	0	0
Chesebro 65S	C65S	6	43	86	Corn silage	17.0 Ton	19	tons	0	0	0	0	12	104	22	116	51	22
Chesebro SW	C66	20	22.5	45	Alfalfa topdress	6.0 Ton	7.5	tons	0	0	0	0	8	2	1	10	2	1
Chesebro SM	C67	17	11.5	23	Corn silage	20.0 Ton	15	tons	0	0	0	0	0	104	22	104	51	22

Walnutdale Dairy 2012 (b) (6) [redacted] of Crop & Nutrient Balance

			Soil Test (P)					Wet Tons/acre		Manure Data									
Field Name	Field ID	Acres	PPM	lbs/acre	2012 Crops	Yield Goal (/Acre)	Yields Achieved	Yield Units	Rate Gal/acre	Month - Year	Manure N (lb)	Manure P (lb)	Credits N (lb)	Fertilizer N (lb)	Fertilizer P (lb)	Total Crop N (lb)	Total P2O5 (lb)	Total P (lb)
Chesebro SE	C68	24	11	22	1st Cutting - Silage	3 & 18 Tons	2&14	tons	0	0	0	0	6	92	0	98	0	0
Chesebro S back	C69	7	12.5	25	Alfalfa topdress	6.0 Ton	7.5	tons	0	0	0	0	8	2	1	10	2	1
Chesebro 70	C70	25	11	22	Alfalfa topdress	5.0 Ton	9	tons	0	0	0	0	0	2	1	2	2	1
Chesebro 71s	C71-s	7.6	5	10	Corn grain	140.0 Bu	95	bu	0	0	0	0	0	30	0	30	0	0
Chesebro 9ac	C72	7	15	30	Alfalfa topdress	5.0 Ton	10.2	tons	0	0	0	0	0	2	1	2	2	1
(b) (6) (b) (6)	1&2	38	16	32	1st Cutting - Silage	3 & 17 ton	2 & 13	tons	11360	May-'12	31	30	5	30	0	66	69	30
(b) (6) (b) (6)	5-Mar	56	21	42	1st Cutting - Silage	3 & 17 ton	2 & 13	tons	11360	May-'12	31	30	3	30	0	64	69	30
(b) (6) (b) (6)	6&7	28	20.5	41	1st Cutting - Silage	3 & 17 ton	2 & 13	tons	11360	May-'12	31	30	7	30	0	68	69	30
(b) (6)	BNW	3	35.5	71	Alfalfa topdress	6.0 Ton	5	tons	11461	Apr-'12	102	43	0	2	1	104	101	44
(b) (6)	B73W	14	47	94	Alfalfa topdress	6.0 Ton	5	tons	16086	Apr-'12 & Jul-'12	120	61	0	2	1	122	141	62
(b) E	B73E	18	19.5	39	Alfalfa topdress	6.0 Ton	5	tons	16086	Apr-'12 & Jul-'12	120	61	0	2	1	122	141	62
4th st	4th	5	25	50	Alfalfa topdress	5.0 Ton	8	tons	0	0	0	0	0	2	1	2	2	1
(b) (6)	Thomp	25	141	282	Corn silage	20.0 Ton	10	tons	0	0	0	0	5	122	0	127	0	0
(b) (6)	Kam	28	16.5	33	Wheat	75.0 Bu	49	bu	0	0	0	0	9	66	0	75	0	0
Home Small	Home4	4	113	226	Corn silage	20.0 Ton	10	tons	0	0	0	0	0	92	0	92	0	0
(b) (6) 4th	R-4th	22	24	48	Alfalfa topdress	6.0 Ton	6	tons	0	0	0	0	0	2	1	2	2	1
(b) (6)	Pete	14	4.5	9	Corn silage	17.0 Ton	13	tons	11461	Apr-'12	102	43	5	151	17	258	137	60
(b) (6)	Lev	45	26.5	53	Corn silage	20.0 Ton	16	tons	0	0	0	0	0	92	0	92	0	0
Division East	Div-e	14	12	24	Corn silage	17.0 Ton	11	tons	0	0	0	0	0	150	16	150	36	16
Divsion West	Div-w	10	13	26	Corn silage	17.0 Ton	11	tons	0	0	0	0	0	150	16	150	36	16
(b) (6)	DW	41	32	64	Wheat - Wheat & Peas	75 bu & 1 T	57 & 4	bu & Tons	12	0	0	0	0	66	0	66	0	0
(b) (6) pasture	Pas-N	8	26	52	Pasture, int. grazing	3.0 Ton	2	tons	7.5T	May-Sept	12	8	0	0	0	12	18	8
Catch basin pas	Pas-S	4	68	136	Pasture, int. grazing	3.0 Ton	2	tons	10T	May-Sept	18	10	8	0	0	26	24	10
(b) (6) N	ZandN	32	24.5	49	Corn silage	17.0 Ton	12	tons	0	0	0	0	0	134	22	134	51	22
(b) (6) S	ZandS	34	26	52	Corn silage	17.0 Ton	12	tons	0	0	0	0	0	134	22	134	51	22
MapleView	NadE	28	79.5	159	Corn silage	21.0 Ton	18	tons	0	0	0	0	19	141	0	160	0	0
R142nd & 9th	R1142	19	58	116	Soybean	50.0 Bu			8178	Nov-'11	94	31	0	0	0	94	70	31
(b) (6) -N	R2LNN	21	124	248	Soybean	50.0 Bu			7230	Nov-'11	64	27	0	0	0	64	62	27
(b) (6) N-S	R2LNS	21	111	222	Soybean	50.0 Bu			7230	Nov-'11	64	27	0	0	0	64	62	27
(b) (6) y S-NW	R3SNW	24	90	180	Soybean	50.0 Bu			6300	Dec-'11	72	24	0	0	0	72	54	24
(b) (6) -NE	R3SNE	20	149	298	Soybean	22.0 Bu			6300	Dec-'11	72	24	0	0	0	72	54	24
(b) (6) S-S	R3SS	30	140	280	Soybean	50.0 Bu			6300	Dec-'11	72	24	0	0	0	72	54	24
(b) (6) t 9th N	R4E9N	20	187	374	Soybean	50.0 Bu			7400	Nov-'11	66	28	0	0	0	66	64	28
(b) (6) t 9th M	R4E9M	20	255	510	Soybean	50.0 Bu			7400	Nov-'11	66	28	0	0	0	66	64	28
(b) (b) 9th S	R4E9S	20	101	202	Soybean	50.0 Bu			7400	Nov-'11	66	28	0	0	0	66	64	28
R LR 137th W	R5W	22	126	252	Soybean	50.0 Bu			7080	Nov-'11	63	27	0	0	0	63	61	27
R LR 137th E	R5E	24	87	174	Soybean	50.0 Bu			7080	Nov-'11	63	27	0	0	0	63	61	27
(b) (6) Front	R6BF	13	210	420	Soybean	50.0 Bu			8750	Nov-'11	78	33	143	0	0	221	75	33
(b) (6) Back	R7BH	19	63	126	Soybean	50.0 Bu			15571	Nov-'11 & Apr-'12	125	69	0	0	0	125	158	69
(b) (6) SE	R8BSE	15	34	68	Soybean	50.0 Bu			8750	Nov-'11	78	33	0	0	0	78	75	33
(b) (6) South	R9BS	9	50	100	Soybean	50.0 Bu			8750	Nov-'11	78	33	0	0	0	78	75	33
(b) (6) e NW	OBNW	14	6	12	Corn silage	18.0 Ton	16	tons	7457	Apr-'12	66	28	0	152	18	218	106	46
(b) NE	OBNE	13	13	26	Corn silage	18.0 Ton	16	tons	7457	Apr-'12	66	28	0	152	18	218	106	46
(b) e SW	OBSW	15	5	10	Corn silage	18.0 Ton	16	tons	7457	Apr-'12	66	28	0	152	18	218	106	46
(b) e SM	OBSM	8	2	4	Corn silage	18.0 Ton	16	tons	7457	Apr-'12	66	28	0	152	18	218	106	46
(b) e SE	OBSE	8	7	14	Corn silage	18.0 Ton	16	tons	7457	Apr-'12	66	28	0	152	18	218	106	46
(b) l East	N-E	46.51	17.5	35	Corn silage	20.0 Ton	18	tons	8228	Apr-'12	73	31	0	154	0	227	71	31
(b) l West	N-W	54.69	17.5	35	Corn silage	20.0 Ton	16	tons	8047	Apr-'12	56	42	0	92	0	148	97	42
(b) (6) - shop	ZBS	26	27	54	Corn silage	20.0 Ton	12	tons	0	0	0	0	0	120	18	120	42	18
X-Bank E	xbe	18	16	32	Corn silage	20.0 Ton	15	tons	0	0	0	0	0	98	17	98	39	17
X-Bank W	xbw	18	28	56	Corn silage	20.0 Ton	15	tons	0	0	0	0	0	98	17	98	39	17
Indus. Drv	Indrv	12	67	134	Corn silage	17.0 Ton	13	tons	0	0	0	0	0	92	0	92	0	0

Walnutdale Dairy 2012 (b) (6) [redacted] of Crop & Nutrient Balance

			Soil Test (P)				Wet Tons/acre			Manure Data								
Field Name	Field ID	Acres	PPM	lbs/acre	2012 Crops	Yield Goal (/Acre)	Yields Achieved	Yield Units	Rate Gal/acre	Month - Year	Manure N (lb)	Manure P (lb)	Credits N (lb)	Fertilizer N (lb)	Fertilizer P (lb)	Total Crop N (lb)	Total P2O5 (lb)	Total P (lb)
Comerce Drv,	ComD	8.5	9	18	Corn silage	17.0 Ton	12	tons	0	0	0	0	0	92	0	92	0	0

Walnutdale Dairy 2012 Manure Application (b) (6) [redacted] *17,852,973 Gallons*

Month-Year	Field	Target Crop	Manure Source	Equipment	Days to Incorp.	Rate/Acre	Rate Basis	Loads, Speed or	Acres Cov.	Total Amount Applied	Avail. N (Lbs/A)	Avail. P_2O_5 (Lbs/A)	Avail. K_2O (Lbs/A)
Mar-12	Home 4 (H4C)	Alfalfa topdress	Pit 3&4	Balzer Surface	0	6,278 Gal	Custom	13.8 Lds	16	100,448	43	76	106
Mar-12	Home 4 (H4D)	Alfalfa topdress	Pit 3&4	Balzer Surface	0	6,278 Gal	Custom	14.6 Lds	17	106,740	43	76	106
Mar-12	Wingers 14th (W38A)	Corn silage	Pit 7&8	Balzer Surface	0	4,440 Gal	Custom	12.2 Lds	20	88,800	35	56	75
Mar-12	Wingers 14th (W38B)	Corn silage	Pit 7&8	Balzer Surface	0	4,440 Gal	Custom	12.2 Lds	20	88,800	35	56	75
Mar-12	Jacksons M (J51)	Corn silage	Pit 7&8	Balzer Surface	0	7,400 Gal	Custom	23.3 Lds	23	170,200	58	93	125
Mar-12	Jacksons M (J51)	Corn silage	Pit 3&4	Balzer Surface	0	7,400 Gal	Custom	28.4 Lds	28	207,200	51	90	125
Mar-12	(b) (6) [redacted] (JS53)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	5,600 Gal	Custom	69 Lds	90	504,000	2	4	12
Apr-12	Wingers (W22B)	Corn silage	Pit 6	Balzer Surface	0	8,000 Gal	Custom	9.9 Lds	9	72,000	46	55	68
Apr-12	Wingers (W22B)	Corn silage	Pit 3&4	Balzer Surface	0	8,000 Gal	Custom	7.9 Lds	7.2	57,600	55	97	135
Apr-12	(b) (6) [redacted] 134th (N40A)	Alfalfa topdress	Pit 3&4	Balzer Surface	0	8,550 Gal	Custom	18.7 Lds	16	136,800	59	103	144
Apr-12	(b) (6) [redacted] 42 (E42)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	8,228 Gal	Custom	15.8 Lds	14	115,200	31	71	134
Apr-12	(b) (6) [redacted] NW (J48)	Corn silage	Lagoon - 8 East	Balzer Surface	N/A	14,400 Gal	Custom	27.6 Lds	14	201,600	55	124	235
Apr-12	(b) (6) [redacted] NW2 (J49)	Wheat	Lagoon - 8 East	Balzer Surface	0	14,400 Gal	Custom	27.6 Lds	14	201,600	128	124	235
Apr-12	(b) (6) [redacted] NW (BNW)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	0	11,461 Gal	Custom	4.7 Lds	3	34,383	102	99	187
Apr-12	(b) (6) [redacted] W (B73W)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	0	11,461 Gal	Custom	22 Lds	14	160,454	102	99	187
Apr-12	(b) (6) [redacted] E (B73E)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	0	11,461 Gal	Custom	28.3 Lds	18	206,298	102	99	187
Apr-12	(b) (6) [redacted] (Pete)	Corn silage	Lagoon - 8 East	Balzer Surface	0	11,461 Gal	Custom	22 Lds	14	160,454	102	99	187
Apr-12	(b) (6) [redacted] Back (R7BH)	Soybean	Pit 3&4	Balzer Surface	0	6,821 Gal	Custom	17.8 Lds	19	129,600	47	83	115
Apr-12	(b) (6) [redacted] NW (OBNW)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,457 Gal	Custom	14.3 Lds	14	104,400	66	64	122
Apr-12	(b) (6) [redacted] NE (OBNE)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,457 Gal	Custom	13.3 Lds	13	96,941	66	64	122
Apr-12	(b) (6) [redacted] SW (OBSW)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,457 Gal	Custom	15.3 Lds	15	111,855	66	64	122

Walnutdale Dairy 2012 Manure Application Summary *17,852,973 Gallons*

Month-Year	Field	Target Crop	Manure Source	Equipment	Days to Incorp.	Rate/Acre	Rate Basis	Loads, Speed or	Acres Cov.	Total Amount Applied	Avail. N (Lbs/A)	Avail. P_2O_5 (Lbs/A)	Avail. K_2O (Lbs/A)
Apr-12	(b) (6) [redacted] SM (OBSM)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,457 Gal	Custom	8.2 Lds	8	59,656	66	64	122
Apr-12	(b) (6) [redacted] SE (OBSE)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,457 Gal	Custom	8.2 Lds	8	59,656	66	64	122
Apr-12	(b) (6) [redacted] East (N-E)	Corn silage	Lagoon - 8 East	Balzer Surface	0	8,228 Gal	Custom	15.8 Lds	14	115,200	73	71	134
Apr-12	[redacted] (b) (6) West (N-W)	Corn silage	Pit 3&4	Balzer Surface	0	8,047 Gal	Custom	18.7 Lds	17	136,800	56	97	136
May-12	Home 4 (H4C)	Alfalfa topdress	Catch Basin	Irrigation	N/A	12,941 Gal	Custom		16	207,056	1	4	27
May-12	Home 4 (H4D)	Alfalfa topdress	Catch Basin	Irrigation	N/A	12,941 Gal	Custom		17	219,997	1	4	27
May-12	Home 5 (H5)	Corn silage	Catch Basin	Irrigation	N/A	6,423 Gal	Custom		21	134,883	1	2	13
May-12	Home 6 (H6)	Corn silage	Catch Basin	Irrigation	N/A	6,423 Gal	Custom		22	141,306	1	2	13
May-12	(b) (6) [redacted] (M13)	Alfalfa topdress	Pit 3&4	Balzer Surface	N/A	9,652 Gal	Custom	30.4 Lds	23	221,996	19	117	163
May-12	(b) (6) [redacted] (1&2)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	3,560 Gal	Custom	18.5 Lds	38	135,280	1	2	7
May-12	(b) (6) [redacted] (1&2)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	7,800 Gal	Custom	40.6 Lds	38	296,400	30	67	127
May-12	(b) (6) [redacted] (3-5)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	7,800 Gal	Custom	59.8 Lds	56	436,800	30	67	127
May-12	(b) (6) [redacted] (3-5)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	3,561 Gal	Custom	27.3 Lds	56	199,416	1	2	7
May-12	(b) (6) [redacted] (6&7)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	7,800 Gal	Custom	29.9 Lds	28	218,400	30	67	127
May-12	(b) (6) [redacted] (6&7)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	3,561 Gal	Custom	13.7 Lds	28	99,708	1	2	7
Jun-12			Pit 7&8		N/A	Gal				260,610			
Jun-12	Home 4 (H4C)	Alfalfa topdress	Catch Basin	Irrigation	N/A	53,373 Gal	Custom		16	853,968	5	16	112
Jun-12	Home 4 (H4D)	Alfalfa topdress	Catch Basin	Irrigation	N/A	53,373 Gal	Custom		17	907,341	5	16	112
Jun-12	(b) (6) [redacted] Front (D17A)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	7,790 Gal	Custom	19.2 Lds	18	140,220	3	5	16
Jun-12	(b) (6) [redacted] front (D17B)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	7,790 Gal	Custom	21.3 Lds	20	155,800	3	5	16
Jun-12	(b) (6) [redacted] 42 (E42)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	6,533 Gal	Custom	40.3 Lds	45	294,000	3	5	14
Jul-12			Slurry Store #5		N/A	Gal				210,240			

Walnutdale Dairy 2012 Manure Application Summary *17,852,973 Gallons*

Month-Year	Field	Target Crop	Manure Source	Equipment	Days to Incorp.	Rate/Acre	Rate Basis	Loads, Speed or	Acres Cov.	Total Amount Applied	Avail. N (Lbs/A)	Avail. P_2O_5 (Lbs/A)	Avail. K_2O (Lbs/A)
Jul-12	Home 4 (H4C)	Alfalfa topdress	Pit 3&4	Balzer Surface	N/A	4,484 Gal	Custom	9.8 Lds	16	71,744	9	54	76
Jul-12	Home 4 (H4D)	Alfalfa topdress	Pit 3&4	Balzer Surface	N/A	4,484 Gal	Custom	10.4 Lds	17	76,228	9	54	76
Jul-12	(b) (6) [redacted] 42 (E42)	Alfalfa topdress	Pit 7&8	Balzer Surface	N/A	5,262 Gal	Custom	32.4 Lds	45	236,800	22	66	89
Jul-12	(b) (6) [redacted] E (J52)	Alfalfa seeding	Lagoon - 8 East	Balzer Surface	N/A	8,763 Gal	Custom	45.6 Lds	38	332,900	33	75	143
Jul-12	(b) (6) [redacted] (JS53)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	5,413 Gal	Custom	66.7 Lds	90	487,200	2	4	11
Jul-12	(b) (6) [redacted] (JS53)	Alfalfa topdress	Pit 3&4	Balzer Surface	N/A	4,722 Gal	Custom	58.2 Lds	90	425,000	9	57	80
Jul-12	(b) (6) [redacted] W (B73W)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	4,625 Gal	Custom	8.9 Lds	14	64,750	18	40	75
Jul-12	(b) (6) [redacted] E (B73E)	Alfalfa topdress	Lagoon - 8 East	Balzer Surface	N/A	4,625 Gal	Custom	11.4 Lds	18	83,250	18	40	75
Jul-12	(b) (6) [redacted] (Kam)	Alfalfa seeding	Pit 7&8	Balzer Surface	0	9,778 Gal	Custom	37.5 Lds	28	273,784	76	123	165
Jul-12	(b) (6) [redacted] (DW)	Corn silage	Lagoon - 8 East	Balzer Surface	N/A	9,205 Gal	Custom	51.7 Lds	41	377,400	35	79	150
Sep-12	Home 4 (H4A)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	8,500 Gal	Custom	21 Lds	18	153,000	76	73	139
Sep-12	Home 4 (H4B)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	8,500 Gal	Custom	22.1 Lds	19	161,500	76	73	139
Sep-12	(b) (6) [redacted] Corn (D19)	Rye for cover	Pit 3&4	Balzer Surface	0	7,400 Gal	Custom	55.8 Lds	55	407,000	51	90	125
Sep-12	(b) (6) [redacted] n of Dr (ED21A)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	8,320 Gal	Custom	25.1 Lds	22	183,040	74	72	136
Sep-12	(b) (6) [redacted] N of Dr (ED21B)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	8,320 Gal	Custom	26.2 Lds	23	191,360	74	72	136
Sep-12	(b) (6) [redacted] 134th (N40A)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	4,507 Gal	Custom	11.1 Lds	18	81,126	2	3	9
Sep-12	(b) (6) [redacted] 134th (N40B)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	4,507 Gal	Custom	9.3 Lds	15	67,605	2	3	9
Sep-12	(b) (6) [redacted] 135th (N40C)	Corn silage	Slurry Store #5	Tanker	N/A	4,507 Gal	Custom	2.5 Lds	4	18,028	2	3	9
Sep-12	(b) (6) [redacted] 42 (E42)	Alfalfa topdress	Slurry Store #5	Tanker	N/A	4,507 Gal	Custom	27.8 Lds	45	202,815	2	3	9
Sep-12	(b) (6) [redacted] W (J50)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	10,286 Gal	Custom	39.5 Lds	28	288,000	92	88	168
Sep-12	(b) (6) [redacted] (Thomp)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	10,656 Gal	Custom	36.5 Lds	25	266,400	95	92	174

Walnutdale Dairy 2012 Manure Application Summary *17,852,973 Gallons*

Month-Year	Field	Target Crop	Manure Source	Equipment	Days to Incorp.	Rate/Acre	Rate Basis	Loads, Speed or	Acres Cov.	Total Amount Applied	Avail. N (Lbs/A)	Avail. P_2O_5 (Lbs/A)	Avail. K_2O (Lbs/A)
Sep-12	(b) (6) [redacted] (Pete)	Wheat	Lagoon - 8 East	Balzer Surface	0	8,307 Gal	Custom	14.8 Lds	13	108,000	74	71	135
Sep-12	(b) (6) [redacted] (Lev)	Rye for cover	Lagoon - 8 East	Balzer Surface	0	8,800 Gal	Custom	54.2 Lds	45	396,000	78	76	143
Oct-12	(b) (6) [redacted] West (D14)	Corn silage	Pit 6	Balzer Surface	0	8,750 Gal	Custom	30 Lds	25	218,750	50	60	74
Oct-12	(b) (6) [redacted] West (D15)	Corn silage	Pit 6	Balzer Surface	0	8,750 Gal	Custom	24 Lds	20	175,000	50	60	74
Oct-12	(b) (6) [redacted] NW (D16)	Corn silage	Lagoon - 8 East	Balzer Surface	0	9,250 Gal	Custom	22.8 Lds	18	166,500	82	80	151
Oct-12	(b) (6) [redacted] Back (D18)	Corn silage	Lagoon - 8 East	Balzer Surface	0	9,250 Gal	Custom	22.8 Lds	18	166,500	82	80	151
Oct-12	(b) (6) [redacted] s of Dr (ED21C)	Corn silage	Pit 1&2	Balzer Surface	N/A	9,250 Gal	Custom	25.3 Lds	20	185,000	26	84	106
Oct-12	(b) (6) [redacted] (JS33)	Corn silage	Lagoon - 8 East	Balzer Surface	N/A	9,391 Gal	Custom	29.6 Lds	23	216,000	36	81	153
Oct-12	(b) (6) [redacted] N (E41)	Corn silage	Pit 1&2	Balzer Surface	N/A	8,500 Gal	Custom	19.8 Lds	17	144,500	24	77	98
Oct-12	Chesebro 40N (C65N)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,879 Gal	Custom	32.4 Lds	30	236,370	70	68	128
Oct-12	Chesebro 65S (C65S)	Corn silage	Lagoon - 8 East	Balzer Surface	0	7,879 Gal	Custom	6.5 Lds	6	47,274	70	68	128
Oct-12	Chesebro SM (C67)	Corn silage	Lagoon - 8 East	Balzer Surface	N/A	7,879 Gal	Custom	18.3 Lds	17	133,943	30	68	128
Oct-12	X-Bank E (xbe)	Corn silage	Lagoon - 8 East	Balzer Surface	0	9,250 Gal	Custom	22.8 Lds	18	166,500	82	80	151
Oct-12	X-Bank W (xbw)	Corn silage	Lagoon - 8 East	Balzer Surface	0	9,250 Gal	Custom	22.8 Lds	18	166,500	82	80	151
Nov-12	Home 5 (H5)	Corn silage	Lagoon - 8 East	Slinger Liquid	0	9,250 Gal	Custom	67 Lds	21	194,250	82	80	151
Nov-12	Home 6 (H6)	Corn silage	Lagoon - 8 East	Slinger Liquid	N/A	9,250 Gal	Custom	70.2 Lds	22	203,500	35	80	151
Nov-12	Home 7 (H7)	Corn silage	Lagoon - 8 East	Slinger Liquid	N/A	9,250 Gal	Custom	47.8 Lds	15	138,750	35	80	151
Nov-12	(b) (6) [redacted] (JS53)	Legume-grass cover	Slurry Store #5	Tanker	N/A	3,640 Gal	Custom	44.9 Lds	90	327,600	1	3	8
Nov-12	MapleView (NadE)	Corn silage	Pit 6	Balzer Surface	0	8,985 Gal	Custom	34.5 Lds	28	251,600	51	62	76
Dec-12	United Bank N (UB37A)	Rye for cover	Pit 1&2	Balzer Surface	0	8,350 Gal	Custom	25.2 Lds	22	183,700	55	76	96
Dec-12	United Bank S (UB37B)	Rye for cover	Pit 3&4	Balzer Surface	0	8,350 Gal	Custom	25.2 Lds	22	183,700	58	101	141

Walnutdale Dairy 2012 Manure Application Summary *17,852,973 Gallons*

Month-Year	Field	Target Crop	Manure Source	Equipment	Days to Incorp.	Rate/Acre	Rate Basis	Loads, Speed or	Acres Cov.	Total Amount Applied	Avail. N (Lbs/A)	Avail. P_2O_5 (Lbs/A)	Avail. K_2O (Lbs/A)
Dec-12	(b) (6) [redacted] (JS53)	Legume-grass cover	Slurry Store #5	Tanker	N/A	3,826 Gal	Custom	47.2 Lds	90	344,400	2	3	8
Dec-12	(b) (6) [redacted] 9th N (R4E9N)	Corn grain	Pit 1&2	Balzer Surface	N/A	8,160 Gal	Custom	22.4 Lds	20	163,200	23	74	94
Dec-12	(b) (6) [redacted] 9th M (R4E9M)	Corn grain	Pit 1&2	Balzer Surface	0	8,160 Gal	Custom	22.4 Lds	20	163,200	54	74	94
Dec-12	(b) (6) [redacted] 9th S (R4E9S)	Corn grain	Pit 3&4	Balzer Surface	0	8,160 Gal	Custom	22.4 Lds	20	163,200	56	99	138

Soil Test Data

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State: Michigan

Plan Saved: 3/27/2013
Init. File Rev: 1/26/2011
Soils File Rev: 10/25/2012

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/100g)
Home 1 (H1)	2011	3.4	Bray P1	242	370	550	2,672	lbs/a	7.6	7.2	9.5
Home 2 (H2)	2011	3.3	Bray P1	266	597	605	3,167	lbs/a	7.4	7.2	11.2
Home 3 (H3)	2011	3.7	Bray P1	248	477	570	2,960	lbs/a	7.5	7.2	10.4
Home 4 (H4A)	2011	2.6	Bray P1	172	291	357	2,111	lbs/a	7.2	7.2	7.3
Home 4 (H4B)	2011	2.5	Bray P1	217	422	395	2,400	lbs/a	7.4	7.2	6.8
Home 4 (H4C)	2011	2.7	Bray P1	166	328	500	2,867	lbs/a	7.4	7.2	9.7
Home 4 (H4D)	2011	2.4	Bray P1	165	370	392	2,325	lbs/a	7.1	7.1	8.1
Home 5 (H5)	2011	3.1	Bray P1	47	190	505	2,980	lbs/a	7.3	7.2	9.9
Home 6 (H6)	2011	2.8	Bray P1	52	144	384	2,529	lbs/a	7.0	7.2	8.3
Home 7 (H7)	2011	3.6	Bray P1	266	246	524	3,780	lbs/a	7.5	7.2	11.9
Home 8 (H8)	2011	2.4	Bray P1	256	275	331	1,550	lbs/a	6.8	7.1	6.2
(b) (6) [redacted] 9 (H9)	2011	2.6	Bray P1	338	169	314	2,048	lbs/a	6.8	7.1	7.2
(b) (6) [redacted] (M13)	2011	1.5	Bray P1	90	140	214	1,172	lbs/a	6.4	6.9	5.0
(b) (6) [redacted] West (D14)	2011	1.7	Bray P1	103	160	274	1,760	lbs/a	6.8	7.1	6.1
[redacted] West (D15)	2011	19.0	Bray P1	109	185	290	1,775	lbs/a	6.7	7.0	6.5
[redacted] NW (D16)	2010	2.2	Bray P1	26	147	354	1,712	lbs/a	6.1	6.9	7.5
[redacted] Front (D17A)	2010	2.6	Bray P1	138	348	442	2,408	lbs/a	7.2	7.2	8.4
(b) (6) [redacted] ront (D17B)	2010	2.6	Bray P1	138	348	442	2,408	lbs/a	7.2	7.2	8.4
[redacted] Back (D18)	2010	2.2	Bray P1	26	147	354	1,712	lbs/a	6.1	6.9	7.5
[redacted] Corn (D19)	2010	2.7	Bray P1	201	293	340	2,217	lbs/a	7.0	7.1	7.6
(b) (6) [redacted] back (ED20)	2010	2.5	Bray P1	84	151	366	1,990	lbs/a	6.4	6.9	7.8
[redacted] n of Dr (ED21A)	2011	3.5	Bray P1	123	360	648	3,088	lbs/a	7.6	7.2	10.8
(b) (6) [redacted] N of Dr (ED21B)	2011	3.0	Bray P1	132	231	497	2,564	lbs/a	7.4	7.1	8.9
(b) (6) [redacted] s of Dr (ED21C)	2010	2.5	Bray P1	20	297	507	2,113	lbs/a	6.6	7.1	8.4

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State: Michigan

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Soils File Rev: 10/25/2012

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/100g)
Wingers (W22A)	2010	2.4	Bray P1	152	229	303	1,972	lbs/a	7.2	7.1	6.6
Wingers (W22B)	2010	2.4	Bray P1	152	229	303	1,972	lbs/a	7.2	7.1	6.6
(b) (6) W north (K26A)	2012	2.4	Bray P1	34	106	310	1,500	lbs/a	5.6	6.8	7.6
(b) (6) W south (K26B)	2012	1.3	Bray P1	18	168	650	5,500	lbs/a	7.4		16.7
(b) (6) 146th (LM32)	2011	2.8	Bray P1	29	115	329	1,572	lbs/a	5.7	6.8	7.8
(b) (6) (b) (6) (JS33)	2010	2.1	Bray P1	66	215	413	1,978	lbs/a	7.2	7.2	7.1
United Bank N (UB37A)	2011	1.5	Bray P1	61	12	120	1,025	lbs/a	6.3	7.0	4.0
United Bank S (UB37B)	2011	1.9	Bray P1	64	145	197	1,478	lbs/a	6.7	7.0	5.2
Wingers 14th (W38A)	2010	2.9	Bray P1	114	349	190	1,847	lbs/a	6.2	7.1	6.6
Wingers 14th (W38B)	2010	2.9	Bray P1	114	349	190	1,847	lbs/a	6.2	7.1	6.6
(b) (6) 134th (N40A)	2010	3.0	Bray P1	39	248	574	2,751	lbs/a	7.0	7.1	10.1
(b) (6) ks 134th (N40B)	2010	3.0	Bray P1	39	248	574	2,751	lbs/a	7.0	7.1	10.1
135th (N40C)	2010	3.0	Bray P1	92	243	537	3,053	lbs/a	7.0	7.0	11.0
(b) (6) N (E41)	2010	2.4	Bray P1	35	189	442	2,663	lbs/a	6.8	7.1	9.3
(b) (6) 42 (E42)	2010	3.1	Bray P1	70	323	580	3,337	lbs/a	7.1	7.2	11.4
(b) (6) 43 (T43)	2012	1.5	Bray P1	212	166	170	1,300	lbs/a	7.3		4.2
(b) (6) 44 (T44)	2012	1.7	Bray P1	78	142	200	1,200	lbs/a	6.8		4.1
45 (T45)	2012	1.0	Bray P1	202	146	150	900	lbs/a	6.6	7.0	3.1
(b) (6) NW (J48)	2010	1.6	Bray P1	131	141	185	1,013	lbs/a	6.3	7.0	4.4
NW2 (J49)	2010	1.5	Bray P1	215	159	210	1,125	lbs/a	6.5	7.0	4.6
W (J50)	2010	1.4	Bray P1	173	99	139	1,134	lbs/a	6.5	7.0	4.0
M (J51)	2010	1.9	Bray P1	250	201	248	1,384	lbs/a	6.7	7.0	5.3
E (J52)	2010	1.7	Bray P1	121	190	227	1,344	lbs/a	6.6	7.0	5.3
(b) (6) (JS53)	2010	1.6	Bray P1	132	173	179	856	lbs/a	6.2	6.9	4.0
Chesebro 40N (C65N)	2011	2.1	Bray P1	31	151	396	1,995	lbs/a	6.3	6.9	8.1
Chesebro 65S (C65S)	2011	2.7	Bray P1	86	203	817	3,300	lbs/a	7.4	7.2	11.9

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Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/100g)
Chesebro SW (C66)	2010	2.2	Bray P1	45	175	459	2,584	lbs/a	6.8	7.1	8.9
Chesebro SM (C67)	2010	2.3	Bray P1	23	157	533	2,142	lbs/a	6.2	6.9	9.2
Chesebro SE (C68)	2010	2.1	Bray P1	22	183	334	1,220	lbs/a	5.5	6.8	7.6
Chesebro S back (C69)	2010	1.8	Bray P1	25	158	318	2,550	lbs/a	7.0	7.0	8.5
Chesebro 70 (C70)	2011	2.6	Bray P1	22	151	615	2,655	lbs/a	7.0	7.1	10.0
Chesebro 71s (C71-s)	2012	2.3	Bray P1	10	172	430	1,900	lbs/a	6.3	6.9	8.0
Chesebro 9ac (C72)	2012	1.6	Bray P1	30	96	184	1,334	lbs/a	6.7	7.0	4.6
(b) (6) (b) (6) (1&2)	2011	2.5	Bray P1	32	126	421	2,300	lbs/a	6.4	6.9	8.8
(b) (6) (3-5)	2011	2.3	Bray P1	42	152	423	2,042	lbs/a	6.5	7.0	8.0
(b) (6) (b) (6) (6&7)	2011	2.2	Bray P1	41	98	250	1,073	lbs/a	6.1	6.9	4.9
(b) (6) NW (BNW)	2009	5.4	Bray P1	71	123	420	3,950	lbs/a	6.5	6.9	13.6
(b) (6) W (B73W)	2009	7.0	Bray P1	94	140	680	3,900	lbs/a	6.7	7.0	13.7
(b) (6) E (B73E)	2009	3.3	Bray P1	39	141	638	2,515	lbs/a	6.8	7.0	9.8
4th st (4th)	2010	2.0	Bray P1	50	110	380	1,800	lbs/a	6.3	6.9	7.4
(b) (6) (Thomp)	2010	1.5	Bray P1	282	197	185	908	lbs/a	6.1	6.9	4.3
(b) (6) (Kam)	2010	2.4	Bray P1	33	134	399	2,118	lbs/a	6.6	6.9	8.0
Home Small (Home4)	2011	2.4	Bray P1	226	232	470	2,700	lbs/a	7.5		9.0
(b) (6) 4th (R-4th)	2011	1.7	Bray P1	48	186	270	1,989	lbs/a	6.6	7.0	7.1
(b) (6) (Pete)	2011	3.0	Bray P1	9	141	718	3,113	lbs/a	6.7	7.0	12.3
(b) (6) (Lev)	2011	3.1	Bray P1	53	146	472	2,696	lbs/a	6.3	7.0	10.2
(b) (6) Big (BK-C)	2011	3.4	Bray P1	74	190	610	3,111	lbs/a	6.6	7.0	11.7
north (BK-B)	2011	3.1	Bray P1	31	98	606	2,960	lbs/a	6.5	6.9	11.5
East (BK-A)	2011	5.4	Bray P1	88	150	718	4,225	lbs/a	6.8	7.0	14.7
SW (BK-D)	2011	3.0	Bray P1	238	130	130	1,200	lbs/a	5.7	6.9	4.9
Division East (Div-e)	2012	1.7	Bray P1	24	184	390	1,700	lbs/a	5.3	6.7	9.7
Divsion West (Div-w)	2012	1.9	Bray P1	26	146	320	1,400	lbs/a	5.0	6.6	9.8
(b) (6) (DW)	2012	1.9	Bray P1	64	198	418	1,600	lbs/a	6.5	6.9	6.8

Soil Test Data

Operation: Walnutdale Farm
Plan File: Walnutdale Dairy 2012 CNMP No 2012.mmp
Plan Folder: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data

County: Allegan
State: Michigan

Plan Saved: 3/27/2013
Init. File Rev: 1/26/2011
Soils File Rev: 10/25/2012

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/100g)
(b) (6) [redacted] pasture (Pas-N)	2011	3.4	Bray P1	52	216	460	2,100	lbs/a	6.5	6.9	8.6
Catch basin pas (Pas-S)	2011	5.2	Bray P1	136	382	790	4,000	lbs/a	7.1		13.8
(b) (6) [redacted] N (ZandN)	2011	2.3	Bray P1	49	82	349	1,800	lbs/a	6.5	7.0	6.8
[redacted] S (ZandS)	2011	2.4	Bray P1	52	62	269	1,590	lbs/a	6.2	6.9	6.4
MapleView (NadE)	2011	2.6	Bray P1	159	306	456	2,491	lbs/a	6.7	7.0	9.3
R142nd & 9th (R1142)	2011	2.4	Bray P1	116	218	120	1,000	lbs/a	6.0	6.9	4.5
(b) (6) [redacted] N-N (R2LNN)	2011	2.8	Bray P1	248	282	330	2,200	lbs/a	6.9		7.3
(b) (6) [redacted] N-S (R2LNS)	2011	2.4	Bray P1	222	240	410	2,800	lbs/a	7.1		9.0
(b) (6) [redacted] S-NW (R3SNW)	2011	2.6	Bray P1	180	252	490	3,500	lbs/a	7.3		11.1
(b) (6) [redacted] S-NE (R3SNE)	2011	2.6	Bray P1	298	336	280	2,100	lbs/a	6.7	6.9	8.0
(b) (6) [redacted] S-S (R3SS)	2011	2.2	Bray P1	280	274	290	2,100	lbs/a	7.1		6.8
(b) (6) [redacted] 9th N (R4E9N)	2011	2.0	Bray P1	374	398	250	1,500	lbs/a	6.8		5.5
(b) (6) [redacted] 9th M (R4E9M)	2011	2.1	Bray P1	510	364	240	2,000	lbs/a	7.0		6.5
(b) (6) [redacted] 9th S (R4E9S)	2011	1.7	Bray P1	202	274	180	1,300	lbs/a	6.6	7.0	4.4
R LR 137th W (R5W)	2011	2.2	Bray P1	252	166	240	2,000	lbs/a	6.6	6.9	7.4
R LR 137th E (R5E)	2011	3.1	Bray P1	174	170	410	3,000	lbs/a	7.0		9.4
(b) (6) [redacted] Front (R6BF)	2011	1.6	Bray P1	420	160	110	1,100	lbs/a	6.3	6.9	4.6
[redacted] Back (R7BH)	2011	5.3	Bray P1	126	90	250	2,500	lbs/a	6.2	6.9	8.6
[redacted] SE (R8BSE)	2011	5.4	Bray P1	68	146	220	2,300	lbs/a	5.8	6.8	9.3
[redacted] South (R9BS)	2011	1.9	Bray P1	100	124	160	900	lbs/a	6.3	6.9	4.3
(b) (6) [redacted] N (HWN)	2011	2.9	Bray P1	70	124	150	900	lbs/a	5.4	6.8	5.4
(b) (6) [redacted] NW (HWNW)	2011	2.6	Bray P1	52	170	200	1,900	lbs/a	5.6	6.8	8.2
(b) (6) [redacted] NE (HWNE)	2011	3.1	Bray P1	60	162	220	2,100	lbs/a	5.9	6.8	8.8

Soil Test Data

Operation: Walnutdale Farm
Plan File: Walnutdale Dairy 2012 CNMP No 2012.mmp
Plan Folder: C:\Local Cloud\Shared\Manure Plan Documents\Walnutdale Dairy CNMP Data

County: Allegan
State: Michigan

Plan Saved: 3/27/2013
Init. File Rev: 1/26/2011
Soils File Rev: 10/25/2012

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/100g)
(b) (6) [redacted] SW (HWSW)	2011	2.0	Bray P1	68	176	180	1,500	lbs/a	5.8	6.9	5.9
(b) (6) [redacted] SE (HWSE)	2011	2.2	Bray P1	38	130	240	2,200	lbs/a	6.5	6.9	7.9
(b) (6) [redacted] NW (OBNW)	2012	2.7	Bray P1	12	114	460	1,900	lbs/a	6.3	6.9	8.0
[redacted] NE (OBNE)	2012	3.4	Bray P1	26	198	630	2,900	lbs/a	6.8		10.4
[redacted] SW (OBSW)	2012	3.2	Bray P1	10	122	580	2,200	lbs/a	6.1	6.8	10.5
[redacted] SM (OBSM)	2012	3.1	Bray P1	4	156	700	2,500	lbs/a	6.6	6.9	10.6
[redacted] SE (OBSE)	2012	3.2	Bray P1	14	166	680	2,200	lbs/a	6.9		8.7
(b) (6) [redacted] East (N-E)	2012	2.7	Bray P1	35	260	324	2,033	lbs/a	6.4	6.9	8.0
(b) (6) [redacted] West (N-W)	2012	3.3	Bray P1	35	207	580	2,850	lbs/a	7.2		9.8
(b) (6) [redacted] - shop (ZBS)	2011	3.0	Bray P1	54	176	622	1,980	lbs/a	6.8	6.9	8.2
X-Bank E (xbe)	2012	1.7	Bray P1	32	190	200	1,100	lbs/a	6.1	6.9	5.0
X-Bank W (xbw)	2012	1.9	Bray P1	56	180	180	1,000	lbs/a	6.0	6.9	4.7
Indus. Drv (Indrv)	2012	2.6	Bray P1	134	154	370	2,000	lbs/a	6.9		6.8
Comerce Drv, (ComD)	2011	2.0	Bray P1	18	148	680	6,300	lbs/a	8.0		18.8
(b) (6) [redacted] W-n (nw-n)								ppm			
(b) (6) [redacted] W-s (nw-s)								ppm			
(b) (6) [redacted] (Bak)	2010	2.2	Bray P1	46	176	323	1,400	lbs/a	6.0		6.9

REPORT NO.
F13044-6004

ACCOUNT NUMBER
33022

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, IN 46808 • Phone 260-483-4759 • Fax 260-483-5274
www.algreatlakes.com • lab@algreatlakes.com

QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64739
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: PIT 1&2

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	80.87	6736.5	
Solids	%	19.13	1593.5	
Nitrogen, Total (TKN)	%	0.368	30.7	18.8 *
Nitrogen, Ammonium (NH4-N)	%	0.165	13.7	13.7 *
Nitrogen, Organic (N)	%	0.203	16.9	5.1 *
Phosphorus (P)	%	0.062	11.8 (as P2O5)	11.8 (as P2O5) *
Potassium (K)	%	0.212	21.1 (as K2O)	21.1 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

Report Approved By: Daniel K. Kite
Daniel K. Kite - Agonomist / Technical Services

Approval Date: 2/15/2013

A&L

REPORT NO.
F13044-6004

ACCOUNT NUMBER
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64740
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: SETTLING TANK

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	91.86	7651.9	
Solids	%	8.14	678.1	
Nitrogen, Total (TKN)	%	0.138	11.5	7.2 *
Nitrogen, Ammonium (NH4-N)	%	0.064	5.3	5.3 *
Nitrogen, Organic (N)	%	0.074	6.2	1.9 *
Phosphorus (P)	%	0.028	5.3 (as P2O5)	5.3 (as P2O5) *
Potassium (K)	%	0.059	5.9 (as K2O)	5.9 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

REPORT NO.
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64741
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: SLURRY STORE

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	99.62	8298.3	
Solids	%	0.38	31.7	
Nitrogen, Total (TKN)	%	0.032	2.7	2.2 *
Nitrogen, Ammonium (NH4-N)	%	0.024	2.0	2.0 *
Nitrogen, Organic (N)	%	0.008	0.7	0.2 *
Phosphorus (P)	%	0.005	0.9 (as P2O5)	0.9 (as P2O5) *
Potassium (K)	%	0.031	3.1 (as K2O)	3.1 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

REPORT NO.
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64742
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: PIT 6

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	74.62	6215.8	
Solids	%	25.38	2114.2	
Nitrogen, Total (TKN)	%	0.317	26.4	16.3 *
Nitrogen, Ammonium (NH4-N)	%	0.144	12.0	12.0 *
Nitrogen, Organic (N)	%	0.173	14.4	4.3 *
Phosphorus (P)	%	0.059	11.2 (as P2O5)	11.2 (as P2O5) *
Potassium (K)	%	0.197	19.7 (as K2O)	19.7 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

REPORT NO.
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ACCOUNT NUMBER
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64743
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: PIT 7

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	71.58	5962.6	
Solids	%	28.42	2367.4	
Nitrogen, Total (TKN)	%	0.394	32.8	19.1 *
Nitrogen, Ammonium (NH4-N)	%	0.160	13.3	13.3 *
Nitrogen, Organic (N)	%	0.234	19.5	5.8 *
Phosphorus (P)	%	0.073	13.9 (as P2O5)	13.9 (as P2O5) *
Potassium (K)	%	0.209	20.9 (as K2O)	20.9 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

REPORT NO.
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64744
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: 8 STORAGE

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	84.60	7047.2	
Solids	%	15.40	1282.8	
Nitrogen, Total (TKN)	%	0.305	25.4	15.8 *
Nitrogen, Ammonium (NH4-N)	%	0.140	11.7	11.7 *
Nitrogen, Organic (N)	%	0.165	13.7	4.1 *
Phosphorus (P)	%	0.054	10.2 (as P2O5)	10.2 (as P2O5) *
Potassium (K)	%	0.178	17.8 (as K2O)	17.8 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

REPORT NO.
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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64745
MANURE TYPE: DAIRY, LIQUID PIT (20)
SAMPLE ID: CATCH BASIN

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	99.54	8291.7	
Solids	%	0.46	38.3	
Nitrogen, Total (TKN)	%	0.020	1.7	1.1 *
Nitrogen, Ammonium (NH4-N)	%	0.011	0.9	0.9 *
Nitrogen, Organic (N)	%	0.009	0.7	0.2 *
Phosphorus (P)	%	0.006	1.1 (as P2O5)	1.1 (as P2O5) *
Potassium (K)	%	0.018	1.8 (as K2O)	1.8 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993
** Manure density assumed to be 8.33 lb/gallon

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TO: GREEN VALLEY AGRICULTURAL
3957 108TH ST SE
CALEDONIA, MI 49316-9425

FOR: WALNUTDALE FAMILY FARMS

ATTN: JOHN CHRISTIAN

LAB NUMBER: 64746
MANURE TYPE: DAIRY, SOLID WITH BEDDING (7)
SAMPLE ID: MANURE PACK

MANURE ANALYSIS REPORT

DATE SAMPLED: 02/08/2013
DATE RECEIVED: 02/13/2013
DATE REPORTED: 02/15/2013

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER TON	FIRST YEAR AVAILABILITY @ POUNDS PER TON
Moisture	%	65.69	1313.8	
Solids	%	34.31	686.2	
Nitrogen, Total (TKN)	%	0.517	10.3	4.7 *
Nitrogen, Ammonium (NH4-N)	%	0.138	2.8	2.8 *
Nitrogen, Organic (N)	%	0.379	7.6	1.9 *
Phosphorus (P)	%	0.083	3.8 (as P2O5)	3.8 (as P2O5) *
Potassium (K)	%	0.434	10.4 (as K2O)	10.4 (as K2O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.
* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993