

## References

### Rancho Cantera LLC

<u>Manure Sample Analysis</u>	<u>(#/1000 gal or #/ton basis)</u>					
	N	NH4	OrgN	1st Year AvN	P2O5	K2O
Holding Pond	7.5	4.1	3.4	4.3	3.60	5.6

<u>Application Method</u>	<u>N retention</u>	<u>% N retention, from MWPS</u>	
SURFACE, SOLID		0.75	2.992
SURFACE, LIQUID		0.8	4.389
AERWAY		0.9	7.381
SURFACE, INCORP		0.95	
INJECT		0.98	
IRRIGATE		0.7	
NONE		0	

<u>Organic N Mineralization</u>	<u>% of OrgN</u>
Year of Application	30.0%
1 Year after Application	15.0%
2 Years after Application	7.5%
3 Years after Application	3.8%
4 Years after Application	1.9%

<u>N, P, &amp; K Requirements</u>	<u>lbs/bu or t, from IL Agronomy Handbook</u>		
<u>Crop</u>	<u>N</u>	<u>P</u>	<u>K</u>
Corn	MRTN rate*	0.43	0.28
Soybeans	0	0.85	1.3
Corn Silage	1.2	2.6	7
Wheat	1	0.9	0.3
Grass Hay	150	12	50
Alfalfa Hay	0	12	50

*\* Corn Nitrogen Rate Based on Maximum Return to Nitrogen Rate. Guidance concerning this rate can be found in section 16 of this CNMP and in Section 9 of the Illinois Agronomy Handbook.*

**Manure Nutrients Value** *(Includes both the manure and parlor water, the water collected from the concrete pad and the bedding is not included in the analysis.)*

**Test Results per 1000 gallons**

<b>1st Year Available Nutrients</b>						
Sample #	Date	Nitrogen	Nitrogen NH4	Phos P2O5	Pot K2O	Sulfur
88236	11/7/2007	9.96	0.00	5.51	9.39	1.33
88237	11/7/2007	9.96	5.83	6.01	9.01	1.46
88238	11/7/2007	12.45	5.00	7.36	9.53	1.75
88239	11/7/2007	13.28	5.00	8.94	8.99	2.13
90467	5/1/2008	11.62	6.67	4.37	7.15	1.06
90468	5/1/2008	10.79	7.50	3.14	7.59	0.82
90469	5/1/2008	10.79	6.67	2.65	7.94	0.72
<b>Averages / 1000 Gallons</b>		<b>11.26</b>	<b>6.11</b>	<b>5.43</b>	<b>8.51</b>	<b>1.32</b>

## Estimated Manure Analysis

	N	NH4	OrgN	1st Year AvN lbs/1000 Gal	P2O5	K2O
Concrete Pad Runoff	0.0	0.0	0.0	0.0	0.0	0.0
Manure	11.3	6.1	5.2	6.4	5.4	8.5
Bedding	0.0	0.0	0.0	0.0	0.0	0.0

Annual Production		
Source	Ft^3	Gallons
Concrete Pad Runoff	380,816	2,848,702
Manure	1,456,350	10,894,255
Bedding	357,700	2,675,782
<b>Total</b>	<b>2,194,866</b>	<b>16,418,739</b>

Annual Nutrient Production						
	N	NH4	OrgN	1st Year AvN	P2O5	K2O
Concrete Pad Runoff	-	-	-	-	-	-
Manure	122,716.0	66,576.0	56,140.0	70,159.0	59,109.1	92,756.8
Bedding	-	-	-	-	-	-
<b>Total</b>	<b>122,716.0</b>	<b>66,576.0</b>	<b>56,140.0</b>	<b>70,159.0</b>	<b>59,109.1</b>	<b>92,756.8</b>
<b>Average per 1000 gal</b>	<b>7.47</b>	<b>4.05</b>	<b>3.42</b>	<b>4.27</b>	<b>3.60</b>	<b>5.65</b>

# MANURE NUTRIENT ANALYSIS REPORT



**AgSource**  
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PO BOX 917

FREEPORT, IL 61032-0917

ANALYSIS FOR: RANCHO CANTERA

DATE PROCESSED: 05/01/2008

DATE SAMPLED: / /

SAMPLE NUMBER: 90468

MATERIAL: Dairy

SAMPLE TYPE: #2

STORAGE SYSTEM: LIQUID

DRY MATTER, % 1.90

MOISTURE, % 98.10

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	10.79	4.32	5.40	5.93
Nitrogen(Surface Applied)	10.79	3.24	4.32	4.86
Phosphorus as P <sub>2</sub> O <sub>5</sub>	3.14	1.89	2.20	2.36
Potassium as K <sub>2</sub> O	7.59	6.07	6.83	7.21
Sulfur	0.82	0.49	0.57	0.62
Estimated Value of Available Nutrients		\$5.53	\$6.62	\$7.17

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R	NH <sub>4</sub> -N:	0.090%
Magnesium:	N/R	Manganese:	N/R	NO <sub>3</sub> -N:	0.004%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

## COMMENTS

- \*1 Applications of manure on the same field for 2 consecutive years increases availability of N, P, K, and S by 10%, and for 3 or more consecutive years by 15%. Availability of N changes depending on application technique. Injection or incorporation within 3 days of application results in higher N availability.
- \*2 Value based on commercial fertilizer costs as of 02/01/2008.  
N (Urea)\$0.52/lb, P<sub>2</sub>O<sub>5</sub> (Triple Superphosphate)\$0.60/lb, K<sub>2</sub>O (Potash)\$0.42/lb, S (Elemental Sulfur)\$0.33/lb.
- \*3 If minor elements are requested, they are reported on a 'dry matter' basis.  
If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

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ANALYSIS FOR: RANCHON CANTERA  
DATE PROCESSED: 05/01/2008  
DATE SAMPLED: 04/28/2008  
SAMPLE NUMBER: 90467  
MATERIAL: Dairy  
SAMPLE TYPE: 04/28/08 #1  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 2.50

MOISTURE, % 97.50

	Estimated Available Nutrient Credits			
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	11.62	4.65	5.81	6.39
Nitrogen (Surface Applied)	11.62	3.49	4.65	5.23
Phosphorus as P <sub>2</sub> O <sub>5</sub>	4.37	2.62	3.06	3.28
Potassium as K <sub>2</sub> O	7.15	5.72	6.43	6.79
Sulfur	1.06	0.63	0.74	0.79
Estimated Value of Available Nutrients		\$6.00	\$7.20	\$7.80

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R	NH <sub>4</sub> -N:	0.080%
Magnesium:	N/R	Manganese:	N/R	NO <sub>3</sub> -N:	0.006%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

## COMMENTS

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- \*2 Value based on commercial fertilizer costs as of 02/01/2008.  
N (Urea) \$0.52/lb, P<sub>2</sub>O<sub>5</sub> (Triple Superphosphate) \$0.60/lb, K<sub>2</sub>O (Potash) \$0.42/lb, S (Elemental Sulfur) \$0.33/lb.
- \*3 If minor elements are requested, they are reported on a 'dry matter' basis.  
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ANALYSIS FOR: RANCHO CANTERA  
DATE PROCESSED: 05/01/2008  
DATE SAMPLED: / /  
SAMPLE NUMBER: 90469  
MATERIAL: Dairy  
SAMPLE TYPE: FRANK #3  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 1.60

MOISTURE, % 98.40

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	10.79	4.32	5.40	5.93
Nitrogen(Surface Applied)	10.79	3.24	4.32	4.86
Phosphorus as P <sub>2</sub> O <sub>5</sub>	2.65	1.59	1.85	1.98
Potassium as K <sub>2</sub> O	7.94	6.35	7.14	7.54
Sulfur	0.72	0.43	0.50	0.54
Estimated Value of Available Nutrients		\$5.44	\$6.52	\$7.06

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R	NH <sub>4</sub> -N:	0.080%
Magnesium:	N/R	Manganese:	N/R	NO <sub>3</sub> -N:	0.002%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

## COMMENTS

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- \*2 Value based on commercial fertilizer costs as of 02/01/2008.  
N (Urea)\$0.52/lb, P<sub>2</sub>O<sub>5</sub> (Triple Superphosphate)\$0.60/lb, K<sub>2</sub>O (Potash)\$0.42/lb, S (Elemental Sulfur)\$0.33/lb.
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ANALYSIS FOR: RANCHO CARTEUR  
DATE PROCESSED: 11/07/2007  
DATE SAMPLED: / /  
SAMPLE NUMBER: 88236  
MATERIAL: Dairy  
SAMPLE TYPE: 1  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 2.50

MOISTURE, % 97.50

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	9.96	3.98	4.98	5.48
Nitrogen (Surface Applied)	9.96	2.99	3.98	4.48
Phosphorus as P <sub>2</sub> O <sub>5</sub>	5.51	3.31	3.86	4.13
Potassium as K <sub>2</sub> O	9.39	7.51	8.45	8.92
Sulfur	1.33	0.80	0.93	1.00
Estimated Value of Available Nutrients		\$5.16	\$6.20	\$6.72

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R
Magnesium:	N/R	Manganese:	N/R
Copper:	N/R	Sodium:	N/R
Iron:	N/R		

## COMMENTS

- \*1 Applications of manure on the same field for 2 consecutive years increases availability of N, P, K, and S by 10%, and for 3 or more consecutive years by 15%. Availability of N changes depending on application technique. Injection or incorporation within 3 days of application results in higher N availability.
- \*2 Value based on commercial fertilizer costs as of 05/04/2007.  
N (Urea) \$0.52/lb, P<sub>2</sub>O<sub>5</sub> (Triple Superphosphate) \$0.48/lb, K<sub>2</sub>O (Potash) \$0.23/lb, S (Elemental Sulfur) \$0.36/lb.
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ANALYSIS FOR: RANCHO CARTERA  
DATE PROCESSED: 11/07/2007  
DATE SAMPLED: / /  
SAMPLE NUMBER: 88237  
MATERIAL: Dairy  
SAMPLE TYPE: 2  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 2.80

MOISTURE, % 97.20

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	9.96	3.98	4.98	5.48
Nitrogen(Surface Applied)	9.96	2.99	3.98	4.48
Phosphorus as P <sub>2</sub> O <sub>5</sub>	6.01	3.61	4.21	4.51
Potassium as K <sub>2</sub> O	9.01	7.21	8.11	8.56
Sulfur	1.46	0.88	1.02	1.10
Estimated Value of Available Nutrients		\$5.26	\$6.33	\$6.86

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R	NH <sub>4</sub> -N:	0.070%
Magnesium:	N/R	Manganese:	N/R	NO <sub>3</sub> -N:	0.005%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

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ANALYSIS FOR: RANCHO CANTERA  
DATE PROCESSED: 11/07/2007  
DATE SAMPLED: / /  
SAMPLE NUMBER: 88238  
MATERIAL: Dairy  
SAMPLE TYPE: 4  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 3.20

MOISTURE, % 96.80

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	12.45	4.98	6.23	6.85
Nitrogen(Surface Applied)	12.45	3.74	4.98	5.60
Phosphorus as P <sub>2</sub> O <sub>5</sub>	7.36	4.42	5.15	5.52
Potassium as K <sub>2</sub> O	9.53	7.62	8.58	9.05
Sulfur	1.75	1.05	1.23	1.31
Estimated Value of Available Nutrients		\$6.19	\$7.48	\$8.12

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R	NH4-N:	0.060%
Magnesium:	N/R	Manganese:	N/R	NO3-N:	0.004%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

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ANALYSIS FOR: RANCHO CARTERA  
DATE PROCESSED: 11/07/2007  
DATE SAMPLED: / /  
SAMPLE NUMBER: 88239  
MATERIAL: Dairy  
SAMPLE TYPE: 5  
STORAGE SYSTEM: LIQUID

DRY MATTER, % 4.20

MOISTURE, % 95.80

Estimated Available Nutrient Credits				
	Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	13.28	5.31	6.64	7.30
Nitrogen (Surface Applied)	13.28	3.98	5.31	5.98
Phosphorus as P <sub>2</sub> O <sub>5</sub>	8.94	5.36	6.26	6.71
Potassium as K <sub>2</sub> O	8.99	7.20	8.09	8.54
Sulfur	2.13	1.28	1.49	1.59
Estimated Value of Available Nutrients		\$6.76	\$8.16	\$8.87

## MINOR ELEMENTS \*3

Calcium:	N/R	Zinc:	N/R
Magnesium:	N/R	Manganese:	N/R
Copper:	N/R	Sodium:	N/R
Iron:	N/R		

NH <sub>4</sub> -N:	0.060%
NO <sub>3</sub> -N:	0.005%

## COMMENTS

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