

## 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	P2O5	K2O
	lbs/1000 Gal					
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.  
If ammonia, nitrate or pH are requested, they are reported on an 'as is' 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	NH <sub>4</sub> -N:	0.060%
Magnesium:	N/R	Manganese:	N/R	NO <sub>3</sub> -N:	0.004%
Copper:	N/R	Sodium:	N/R		
Iron:	N/R				

## COMMENTS

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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

- \*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.
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- \*3 If minor elements are requested, they are reported on a 'dry matter' basis.  
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