Smith Contracting Inc.
3941 Wynne Ave
Butte, Montana 59701
Phone (406) 723-6740 - Fax (406) 723-6742

FAX TRANSMITTAL

To: Jim Deutsch	From: Lee Barron
Company: ND AML	
Fax # 701-328-2410	Number of Pages: 11 (Including cover page)
Date 08/05/10	

RE: Buechler / Velva Issues

☐ Urgent ☒ Original sent by mail ☐ Express Courier

☐ Confidential ☐ Original not sent ☐ _____

Please acknowledge this fax by
return fax to Smith Contracting
Fax: 406-723-6742

SMITH CONTRACTING, INC.
3941 Wynne Ave.
Butte, Montana 59701
Phone: 406-723-6740 Fax: 406-723-6742

Date: 08-04-10
To: Jim Deutsch – Director of AML Division – Public Service Commission
From: Lee Barron
RE: Change Order 1 Request -

Dear Jim,

Please review the documentation set forth below.

Soil Representation:

The proposal and contract represented the material to be moved as, "dirt". Smith understood the word, "dirt" to mean sandy loose material and relied on this representation for purposes of bidding this project.

The Specifications do not define the material that needs to be moved other than calling it, "dirt". There are numerous definitions of dirt to be found on the internet and elsewhere. Generally speaking, dirt can be described as, "earth or soil, especially when loose," "any fine grained unconsolidated mixture that comes from the ground." Use of the term, "dirt" is slang, below descriptive standards and ambiguous.

At the walk-through the overburden piles were referred to as unconsolidated. During the walk through and just previous to it, the weather had been relatively dry and as such, the soil appeared dry, loose, unconsolidated and non-cohesive. It appeared that it would break-up easily and nearly flow when pushed with a dozer. There was no attempt to characterize the soil as anything other than what is described above.

After it became apparent that the material was much different than what we had believed, I did some research and found the following:

As per the NRCS soil survey, the soils in this area are generally clay loams with inclusions of clays and other similar soils. These soils include Bowbells-Tonka Complex, Williams Loam Level, Williams Loam Undulating and Zahl-Max Loams Hilly. These are all Glacial Till Soils. The constructs and the origins of these soils are important since how they were formed is why they can be so difficult to work with.

The tills were formed during one or more of the past glacial periods. At these times the land was covered with perhaps one or two miles thick of ice for many 10's of thousands of years at a time. Due to the extraordinary weight of the ice, these soils became compacted to the point that they were very dense and cohesive. These soils remain very dense today.

When the soils were removed as overburden from the coal seam they were placed in various ways such that their surface was anything from convex to somewhat concave to flat. Even though they were disturbed by the excavation, they still remain very cohesive and dense. Excavating and moving of these soils simply broke the material into smaller pieces of very cohesive and dense particles. The excavation of the soil also created macro-pore spaces between the dense particles of soil.

Rain Events and Mobilization:

North Dakota DOT lifted the road restrictions so we could get to the site with transports on June 27, 2010

(See Attached). After that date, we needed four days to line-out the transport company and also to get our transport there. Additionally, we had nine rain days that I have documentation for along with associated Sundays that we didn't work. I believe there may have been more rain days and I'll research that in the next few days. With these rain and transport days, the project start date should be June 9th. The end of the project then should be November 6th if we go by Section 16 of the Special Terms and Conditions on page 14 of the bid documents. If we go by Section 6 of the Special Terms and Conditions on page 12 and by the date on the contract, then the end date for the project should be June 30, 2011... a bit confusing.

Rain Days:

06-11-10	Rain – Shut Down at 10:00 am
06-12-10	Sunday – Since the contract time is in calendar days then Sunday should not be counted if the week is fairly non-productive
06-17-10	4" rain in 2 hrs
06-18-10	Rained all day
06-19-10	So wet most equipment can't work
06-20-10	Sunday
06-21-10	Rained out
06-22-10	1 ½" rain on previous night and job shutdown
06-25-10	1 ½" rain the previous night again and only dozers could work

The entire area... including large portions of North Dakota and Minnesota, were the recipients of large quantities of rain this spring. In fact, there was so much rain that some crops in portions of these two states were not even planted since the farmers could not get into the fields due to the excess rains. The quantity of rain received was abnormally high, certainly not foreseeable and continues to be quite detrimental to our prosecution of this project.

Please see the attached rain statistics documents.

The attached documents show that the quantity of rain that we received this spring (10.93 inches in May and June) was far beyond what would normally be expected. We have reason to believe that the rain in and around the Velva area may have been even heavier than the data that I have from the Minot area. However, I do not have any historical data to compare it to.

As the documents show, the theoretical probability that we would receive this much rain in the months of May and June are less than 3%. The actual probability of receiving this much rain is about 8%. In any case, whether it is 3% or 8%, the probability of receiving this much rain is very small... so small in fact that it is not reasonably foreseeable.

The rain issue is important since it had affected not only the start date and the end date but it has also dramatically affected our production, our costs and ultimately our schedule.

Glacial tills along with the rain events

The macro pore spaces allow for at least one foot, or more, of penetration for each inch of rain that falls. This same soil as found in its virgin state does not have these macro pore spaces and as such, would not allow for the penetration of this much water to this great of a depth in this short of a period of time. Normally, there would be ample dry days in between rain events such that the soil would have a chance to dry out. These dry days were substantially absent this spring. Since the surface was saturated for a good share of two months and we received in excess ten to eleven inches of rain, We postulate that the rain did in fact penetrate ten to fifteen feet into the soil.

As the rain penetrated, the clays swelled to the point where now we no longer had compacted and cohesive

particles but now we had one big block of cohesive dense material that is very difficult to work with.

In Conclusion, we assert the Following:

AML had superior knowledge in that they knew that this material was Clay Loam and/or a Clay and that it could be very difficult to work with... especially when wet. North Dakota AML may not have known the technical details of the soils origin and its constructs but it knew the behavioral properties of the soil.

AML's representation of the material as, "dirt," as relied upon by Smith for bidding and performing the work, was misleading and non-descriptive.

AML had an obligation to the bidders, to sufficiently define the soil in a manner such that all bidders would be aware of the type soil and the challenges that would be faced in moving this soil.

AML also had an obligation to inform the bidders that the appearance, properties and the consistency of the soil during the walk-thru would change dramatically with the addition of moisture.

Because of AML's acts and omissions, we were unknowingly lacking in the information that we needed in order to properly price and perform this project.

Because of the above issues, our production is less than half of what we originally anticipated and our expenses are in turn, more than double what we originally anticipated.

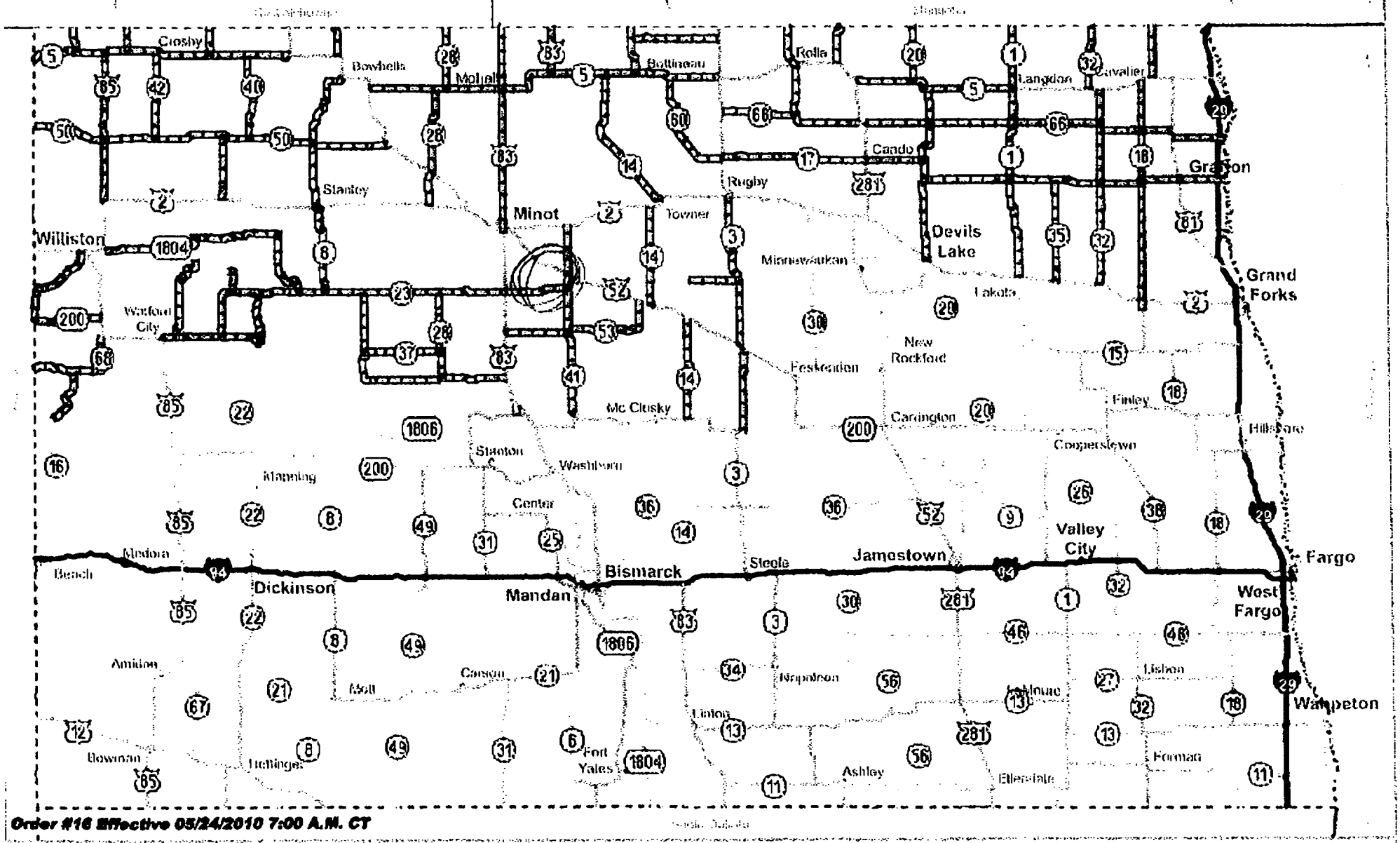
Pursuant to the Disputes provision of this contract, we would like to discuss these issues with AML and attempt to come to amicable resolutions of these issues with AML.

Please call me at your earliest convenience.

Sincerely,

Lee Barton

North Dakota Load Restrictions 05/24/10



Order #16 Effective 05/24/2010 7:00 A.M. CT

Restrictions in Effect

Interstate System

by Legal Weight	8 - Ton	7 - Ton	6 - Ton	5 - Ton
Single Axle	20,000 lbs	16,000 lbs	14,000 lbs	12,000 lbs	10,000 lbs
Tandem Axle	34,000 lbs	32,000 lbs	28,000 lbs	24,000 lbs	20,000 lbs
3 Axle Group or more per Axle	17,000 lbs	14,000 lbs	12,000 lbs	10,000 lbs	10,000 lbs
Max. Axle Group	48,000 lbs	42,000 lbs	36,000 lbs	30,000 lbs	30,000 lbs
Gross Weight	105,500 lbs	105,500 lbs	105,500 lbs	80,000 lbs	80,000 lbs

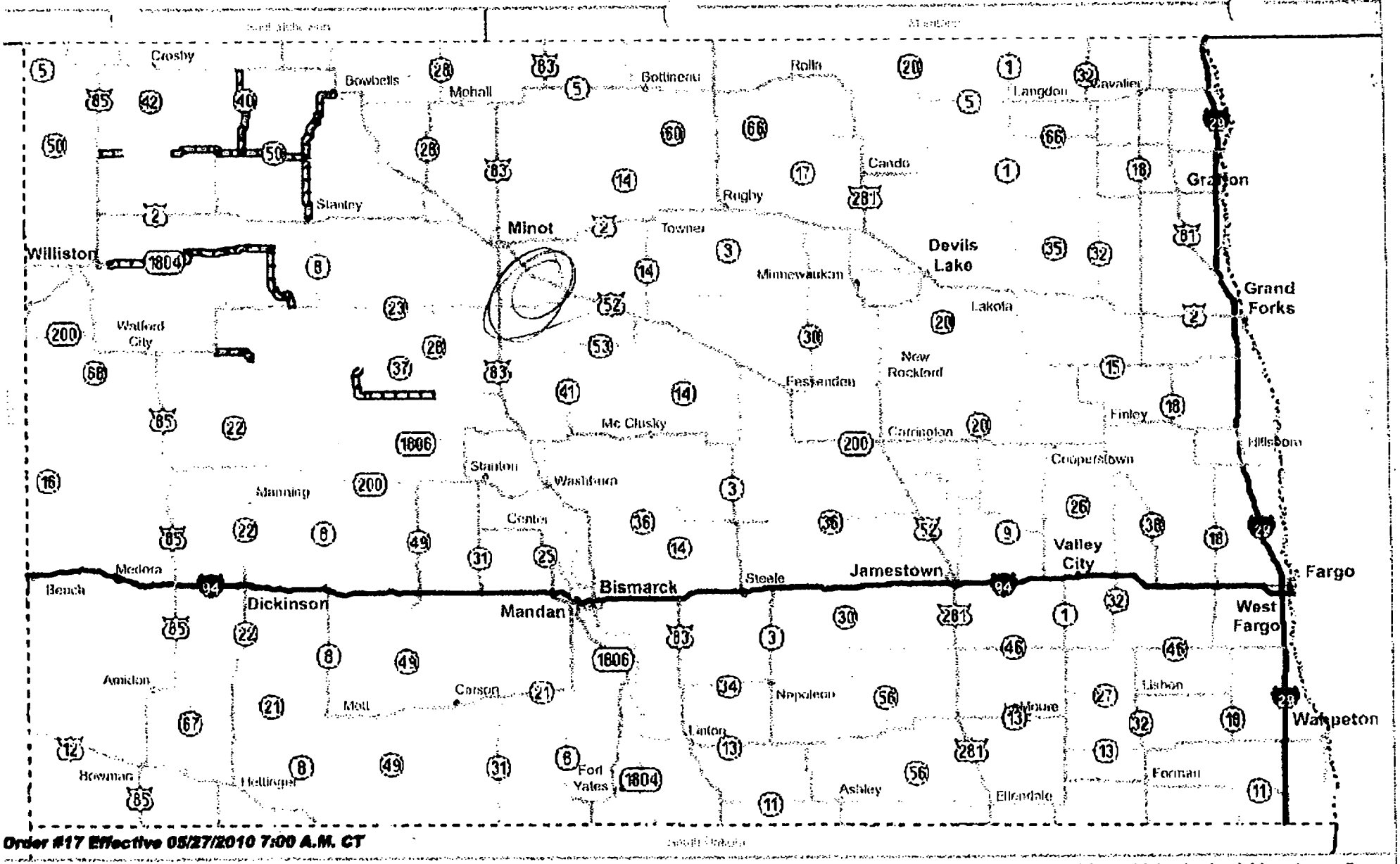
Call Highway Patrol for vehicle size/weight and permits.
Call 511 for enroute information

Phone #'s (701)

HP Permit Office	328-2621	Minot	857-6925
NDDOT Office	328-2545	Dickinson	227-6500
Bismarck	328-6950	Grand Forks	787-6500
Valley City	845-8800	Williston	774-2700
Devils Lake	665-5100	Fargo	239-8900

North Dakota Load Restrictions

05-27-10



Order #17 Effective 05/27/2010 7:00 A.M. CT

Restrictions in Effect

Interstate System

by Legal Weight	8 - Ton	7 - Ton	6 - Ton	5 - Ton
Single Axle	20,000 lbs	16,000 lbs	14,000 lbs	12,000 lbs	10,000 lbs
Tandem Axle	34,000 lbs	32,000 lbs	28,000 lbs	24,000 lbs	20,000 lbs
3 Axle Group or more per Axle	17,000 lbs	14,000 lbs	12,000 lbs	10,000 lbs	10,000 lbs
Max. Axle Group	48,000 lbs	42,000 lbs	36,000 lbs	30,000 lbs	30,000 lbs
Gross Weight	105,500 lbs	105,500 lbs	105,500 lbs	80,000 lbs	80,000 lbs

Call Highway Patrol for vehicle size/weight and permits.
Call 511 for enroute information

Phone #'s (701)

HP Permit Office	328-2621	Minot	857-6925
NDDOT Office	328-2545	Dickinson	227-6500
Bismarck	328-6950	Grand Forks	787-6500
Valley City	845-8800	Williston	774-2700
Devils Lake	665-5100	Fargo	239-6900

	MAY	JUNE	MAY	JUNE	Total
	Weather Underground (precip. In Inches)		Weather Warehouse (precip. In inces)		
2010	4.65	6.29	4.64	0	4.64
2009	1.45	1.69	n/a	1.69	
2008	2.85	4.56	2.84	4.56	7.4
2007	7.04	4.6	7.04	4.57	11.61
2006	1.07	1.99	1.08	2.26	3.34
2005	3.36	8.79	3.4	10.08	13.48
2004	2.59	3.34	2.59	3.33	5.92
2003	2.99	2.32	2.98	2.3	5.28
2002	0.55	3.77	0.53	3.77	4.3
2001			1.54	2.89	4.43
2000			3.45	3.06	6.51
1999			6.75	1.79	8.54
1998			1.01	3.95	4.96
1997			0.73	2.42	3.15
1996			1.6	3.19	4.79
1995			1.98	3.09	5.07
1994			4.26	4.2	8.46
1993			2.61	4.35	6.96
1992			1.1	1.97	3.07
1991			4.95	4.39	9.34
1990			1.08	2.65	3.73
1989			1.01	1.97	2.98
1988			1.48	2.76	4.24
1987			2.06	1.85	3.91
1986			1.41	3.48	4.89
1985			3.81	2.94	6.75
1984			0.02	2.77	2.79
1983			1.31	2.93	4.24
1982			3.52	5.02	8.54
1981			0.77	4.46	5.23
1980			0.05	1.9	1.95
1979			2.9	0.62	3.52
1978			3.68	3.87	7.55
1977			4.59	4.17	8.76
1976			0.15	4.9	5.05
1975			2.44	4.22	6.66
1974			4.52	1.33	5.85
1973			1.75	3.34	5.09
1972			2.33	2.45	4.78
1971			1.36	2.92	4.28
1970			2.7	1.66	4.36
1969			1.19	4.34	5.53

5/1/2010	6/1/2010	Total for May and June 2010
4.64	6.29	10.93
N/A	1.69	< 2009 was not included

1968	2.91	1.89	4.8
1967	0.23	1	1.23
1966	2.57	1.69	4.26
1965	3.08	3.46	6.54
1964	3.29	7.96	11.25
1963	6.15	5.28	11.43
1962	4.27	4.64	8.91
1961	1.53	0.15	1.68
1960	2.49	1.78	4.27
1959	1.02	3.32	4.34
1958	0.59	2.29	2.88
1957	1.52	3.56	5.08
1956	1.53	2.8	4.33
1955	2.36	1.24	3.6
1954	1.64	6.5	8.14
1953	6.02	7.12	13.14
1952	0.6	3.59	4.19
1951	0.87	4.3	5.17
1950	2.9	4.13	7.03
1949	4.63	1.56	6.19

I have two sets of rain data.
The first is the Weather Underground, but they go back only to 2002
The second is the Weather Warehouse. The Weather Wharehose is the data that we are analyzing.
There are two issues with the Weather Wearhousess data. June of 2010 is missing and May of 2009 is missing
We want to compare the rain that we have had in May and June of this year to the 60 year history for May and June.
Cell H3 is 4.64 inches in May(Weather Wherehouse) and Cell I3 is 6.29(Weather Underground) inches in June.
Notice that since I don't have June 2010 data for the Weather Warehouse
I've taken the Weather Underground value of 6.29 inches in June of 2010.

The second problem with the Weather Warehouses data is that May of 2009 is missing. I've chosen to omit all of the data for 2009 to compensate for this.

The shape of the curve is unimodal and shows that it follows a fairly normal distribution with a slight skew to the right. We will assume, for our purposes that the slight skew to the right is due to the fact that we have only 60 years worth of data.

The second chart is a normal Q-Q plot that shows that the data lies fairly closely to the diagonal line which means that it exhibits the characteristics of a quite normal curve.

Mean = 5.76 inches of rain

Standard Deviation = 2.691

STD1 – 1 Standard Deviation

STD2 – 2 Standard Deviations – 90% of all years fall within 2 Standard Deviations of the mean (average). Five pct will fall below the 2 Standard Deviations line on the left side of the curve and 5% will fall above the 2 Standard Deviations on the right side of the curve. The red line is the rainfall this year in May and June. As you can see, it is nearly at the 2 Standard Deviations line on the right side of the graph.

Below, we calculate the theoretical probability of receiving 10.93 inches or more of rain during the months of May and June this year.

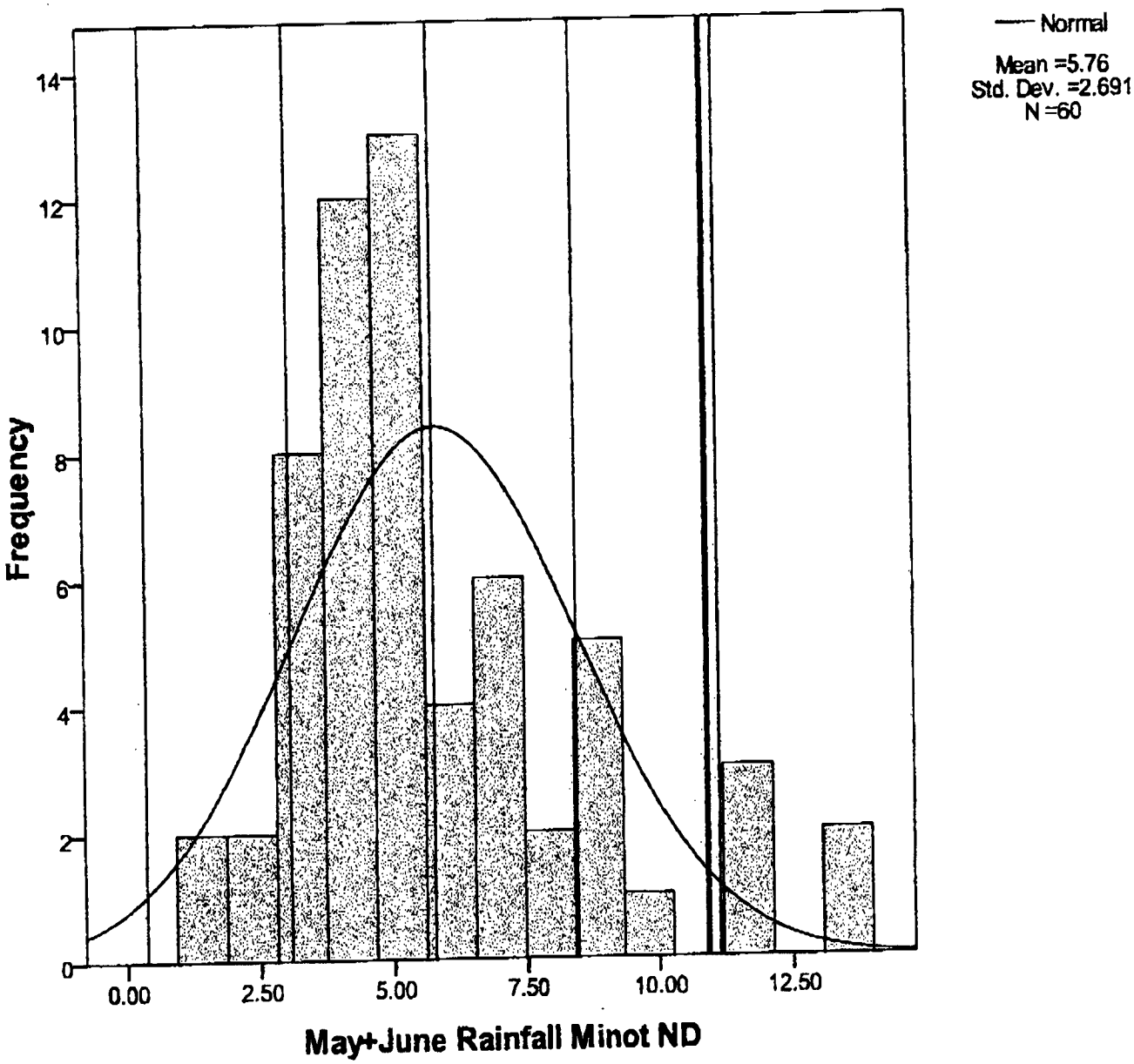
$Z = (10.93-5.76)/2.691$ $Pr(z>=1.92)=0.0274$

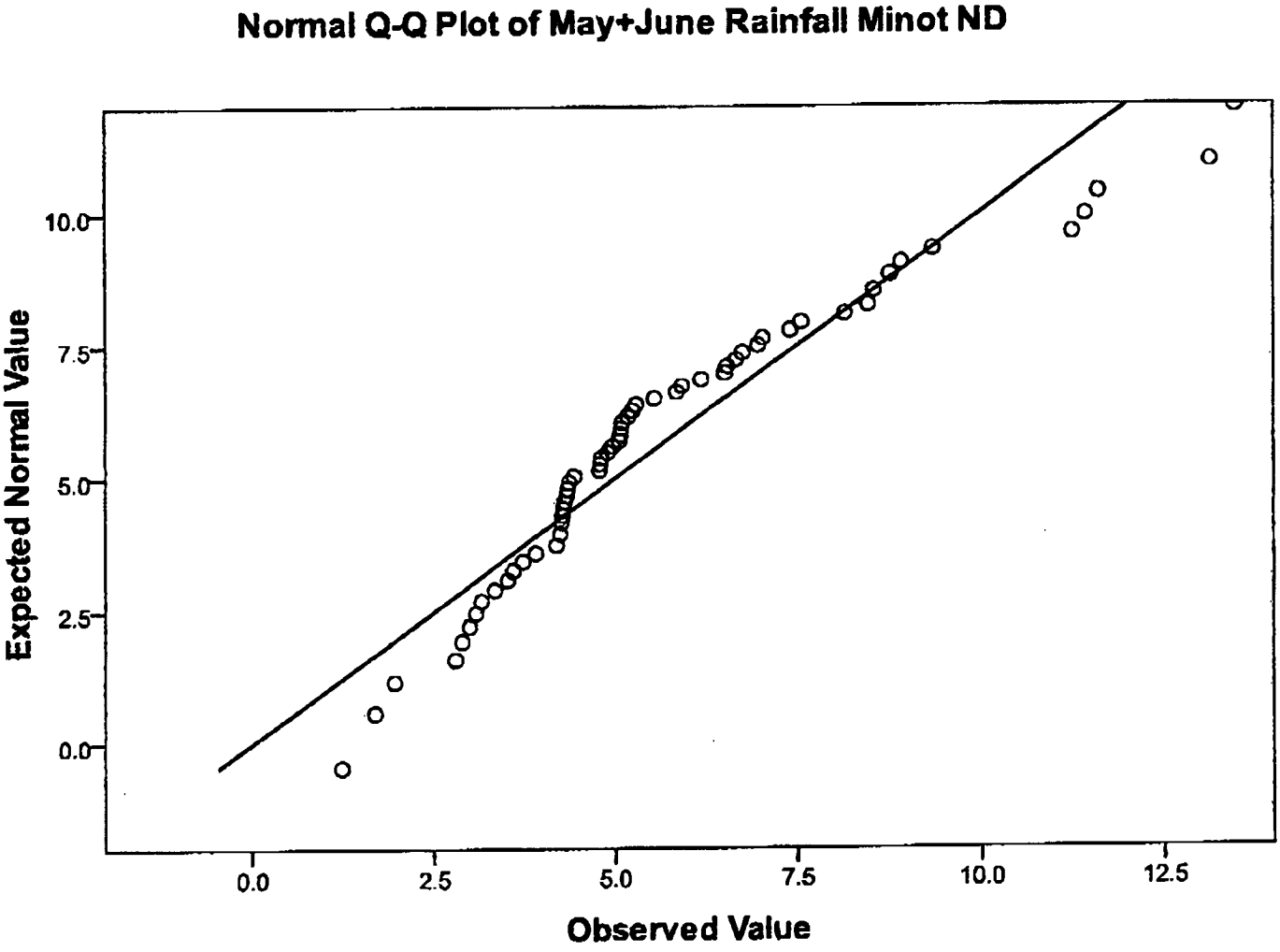
The theoretical probability that we would receive 10.93 inches of rain or more in May and June is under 3%

The data shows that the probability is about 8.3%.

The difference between the theoretical probability and the actual probability is likely due to the fact that we have only 60 years worth of data.

In any case, whether it be 3% or 8%, this event is rare enough such that we would not be able to anticipate this and/or plan for this in our bidding process.


Normal
Mean =5.76
Std. Dev. =2.691
N =60
Frequency
0
2
4
6
8
10
12
14
0.00
2.50
5.00
7.50
10.00
12.50
May+June Rainfall Minot ND


Normal Q-Q Plot of May+June Rainfall Minot ND
Expected Normal Value
10.0
7.5
5.0
2.5
0.0
0.0
2.5
5.0
7.5
10.0
12.5
Observed Value