

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

CNWRA
CONTROLLED
COPY 564

C. Dinwiddie

R. McGinnis

CNWRA/SWRI

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SAN ANTONIO, TX 78238

210-684-5111

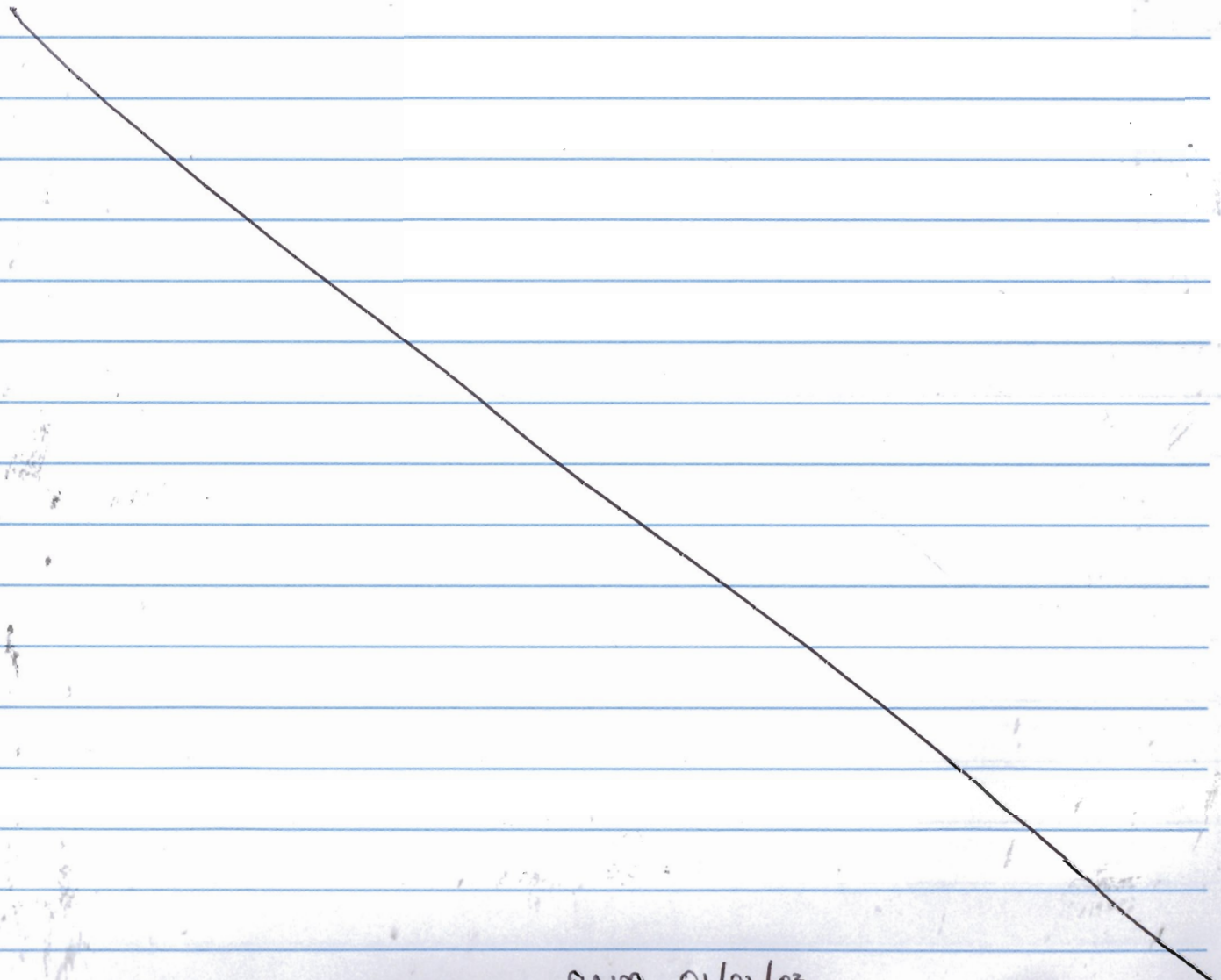
This is a continuation of the CNWRA controlled scientific notebook #562, titled:

"Analysis of Escalante, Utah Permeability Data for High Velocity Flow Effects"

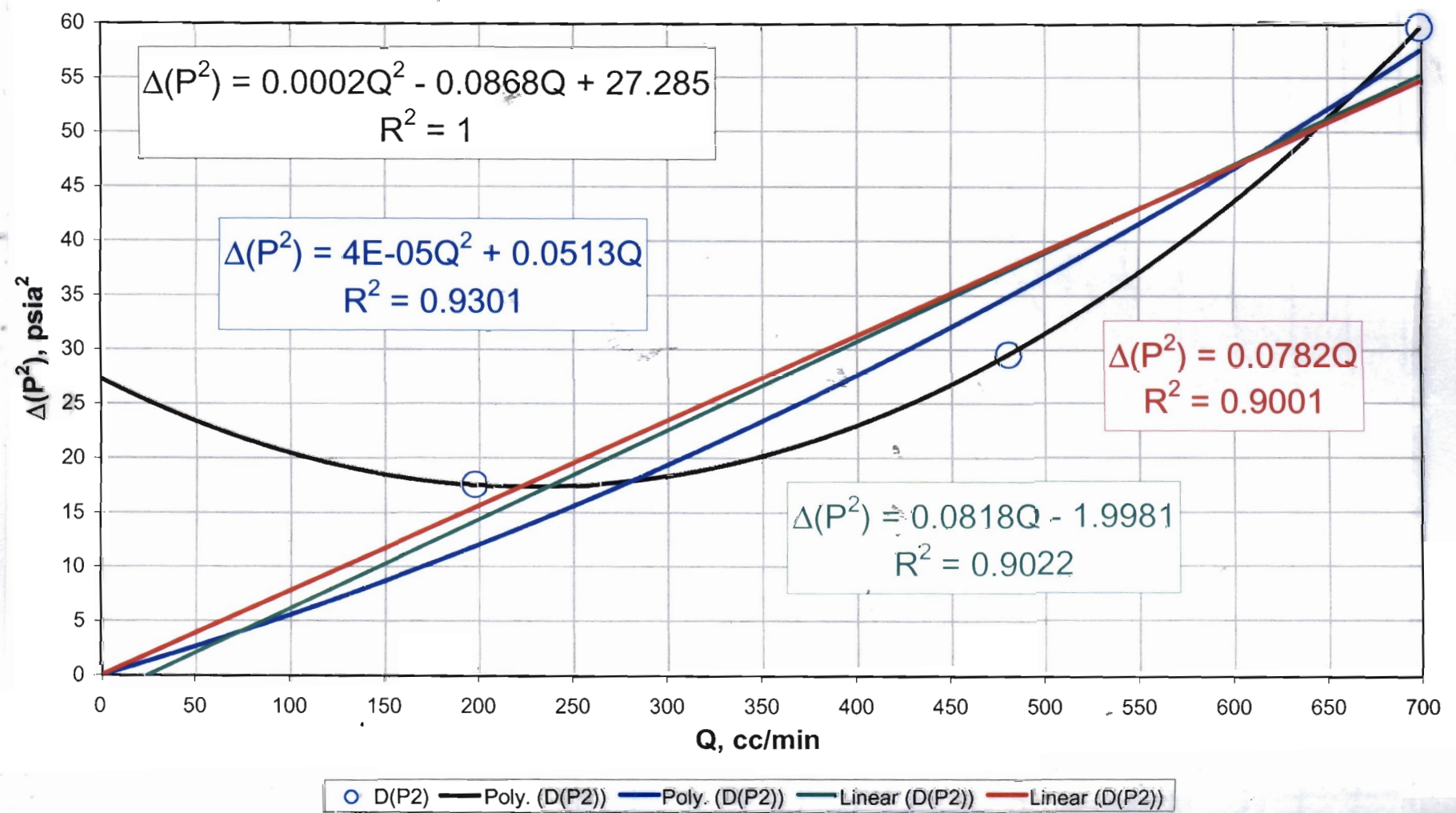
Participating individuals	Cynthia L. Dinwiddie	(502-6085)
	Ronald N. McGinnis ^{RNM}	(502-5825)

Contract No.	Project: 06002.01.131
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Task objective may be found in SN 537 + 545.

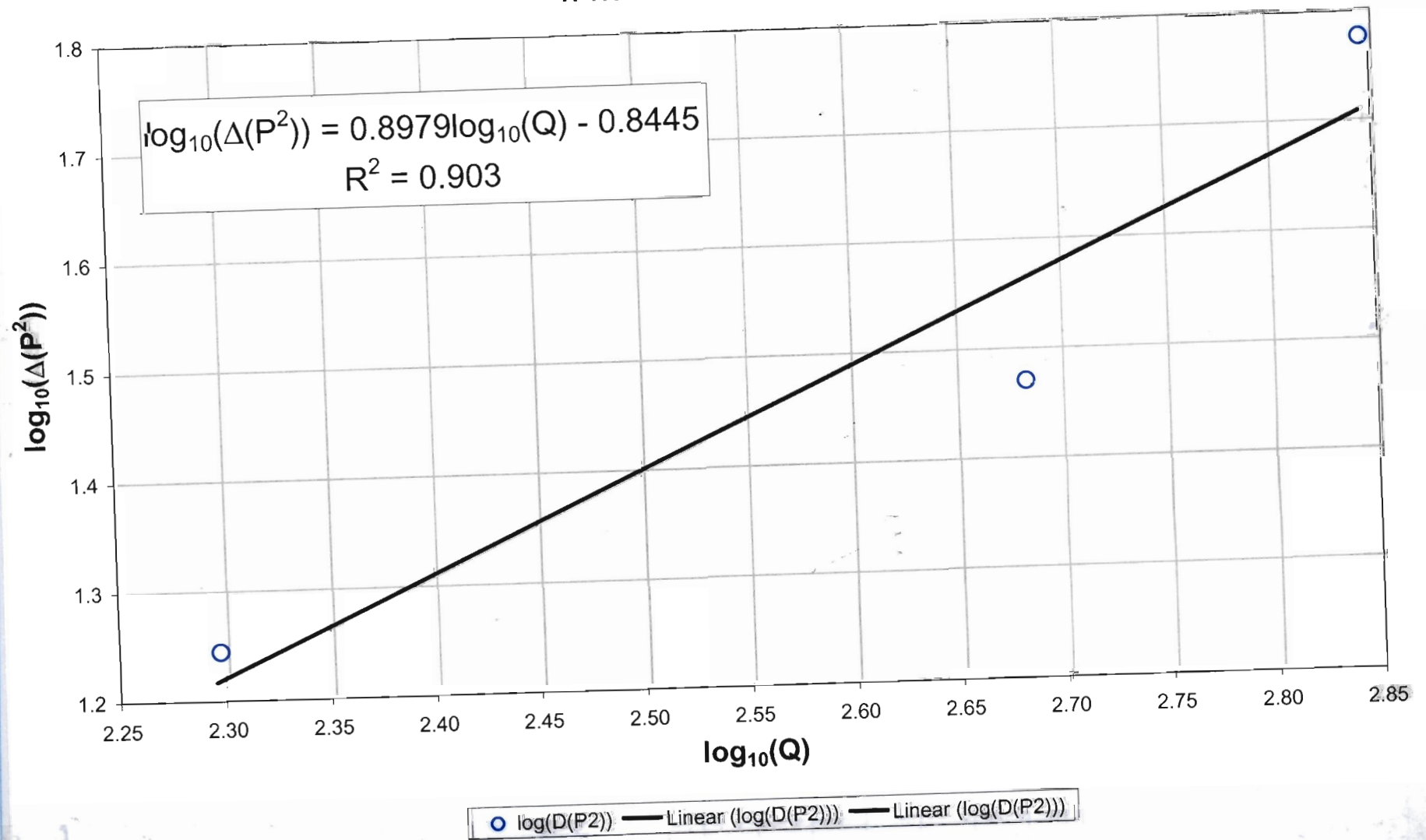


Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 115



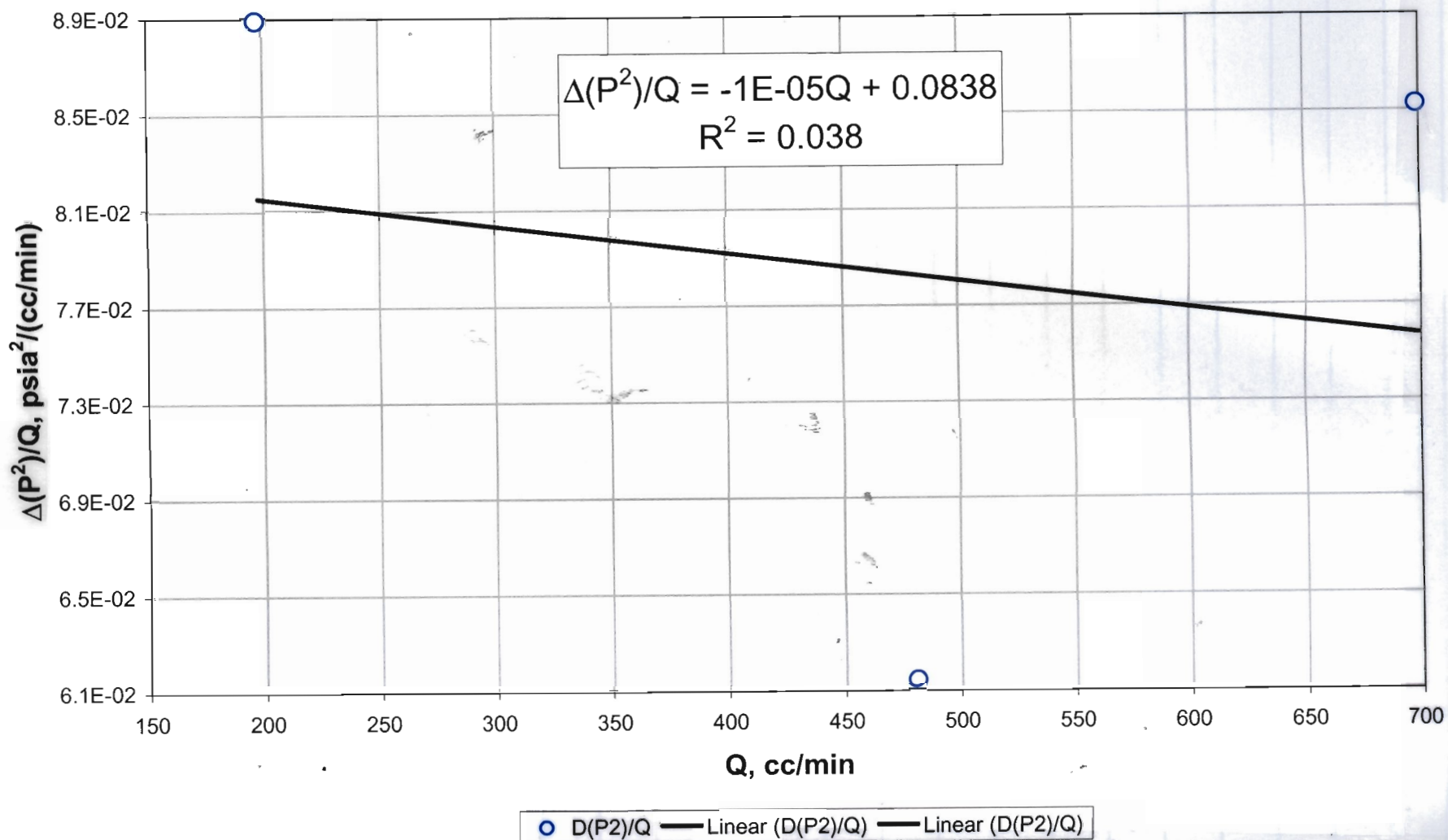
Q in cc/min

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 H Transect: Drillhole 115



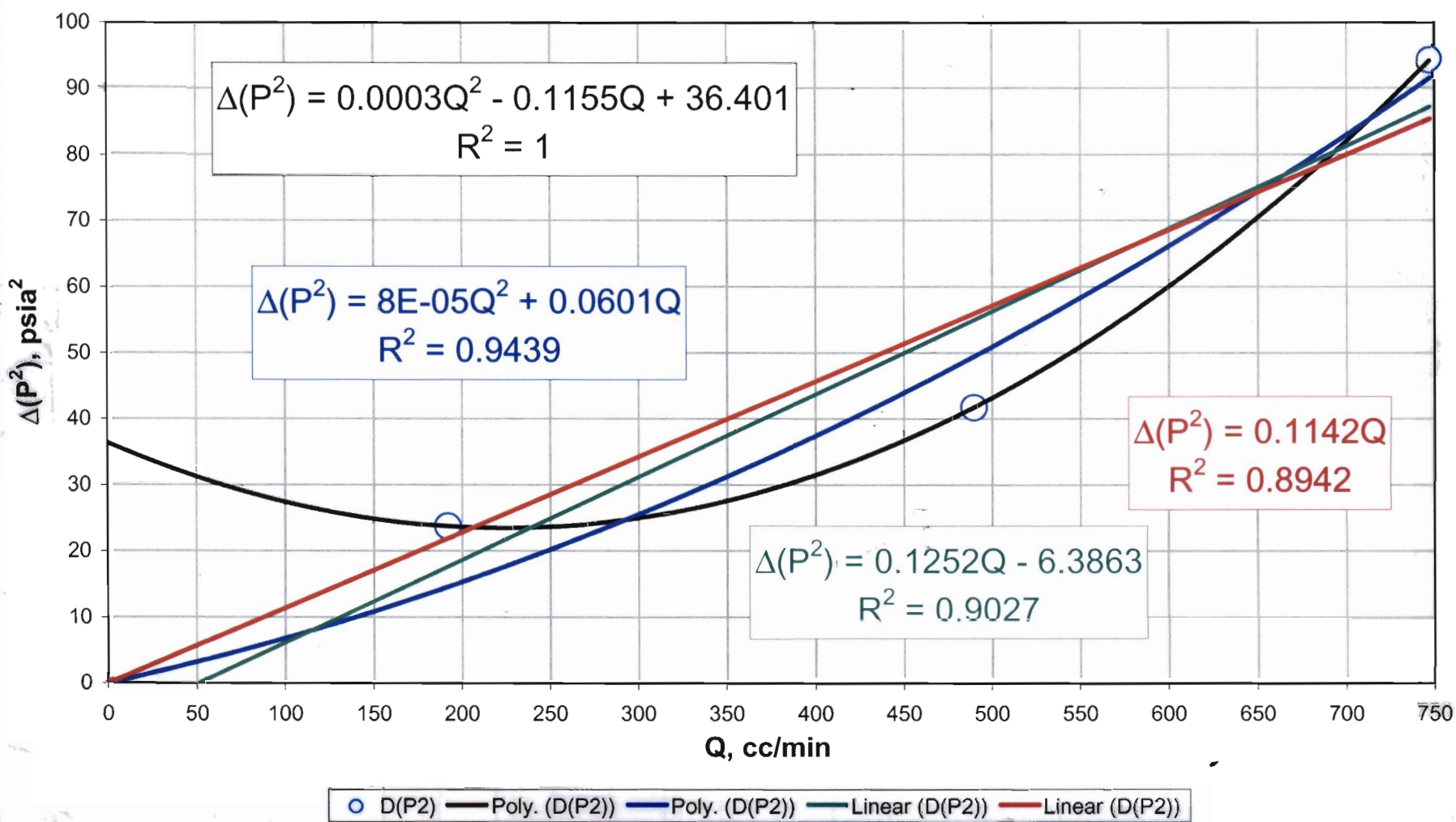
Q in cc/min

Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 H Transect : Drillhole 115



RMM, 01/02/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
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 H Transect: Drillhole 116

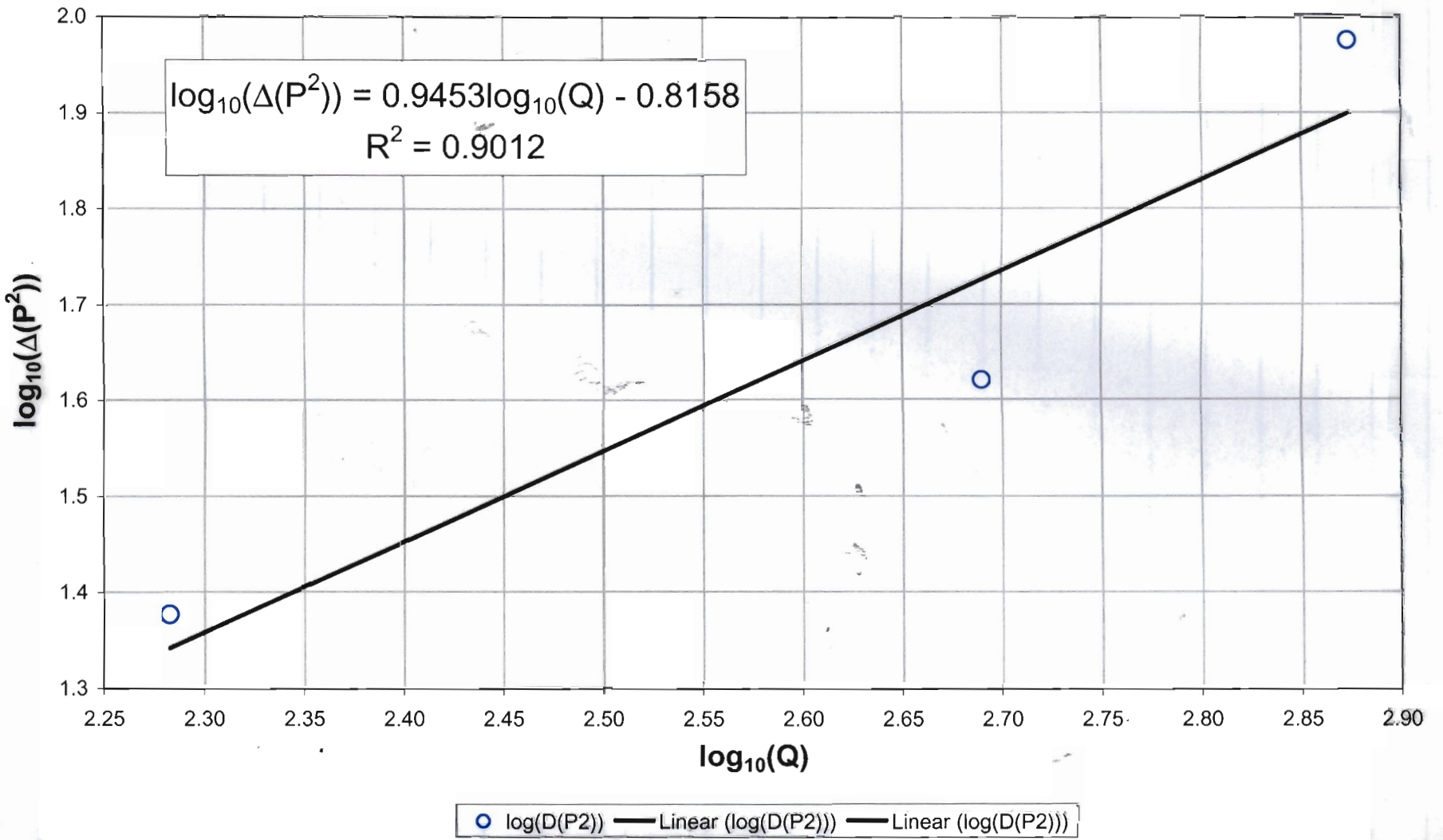


RMM, 01/02/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)

H Transect: Drillhole 116

RWN, 01/02/03

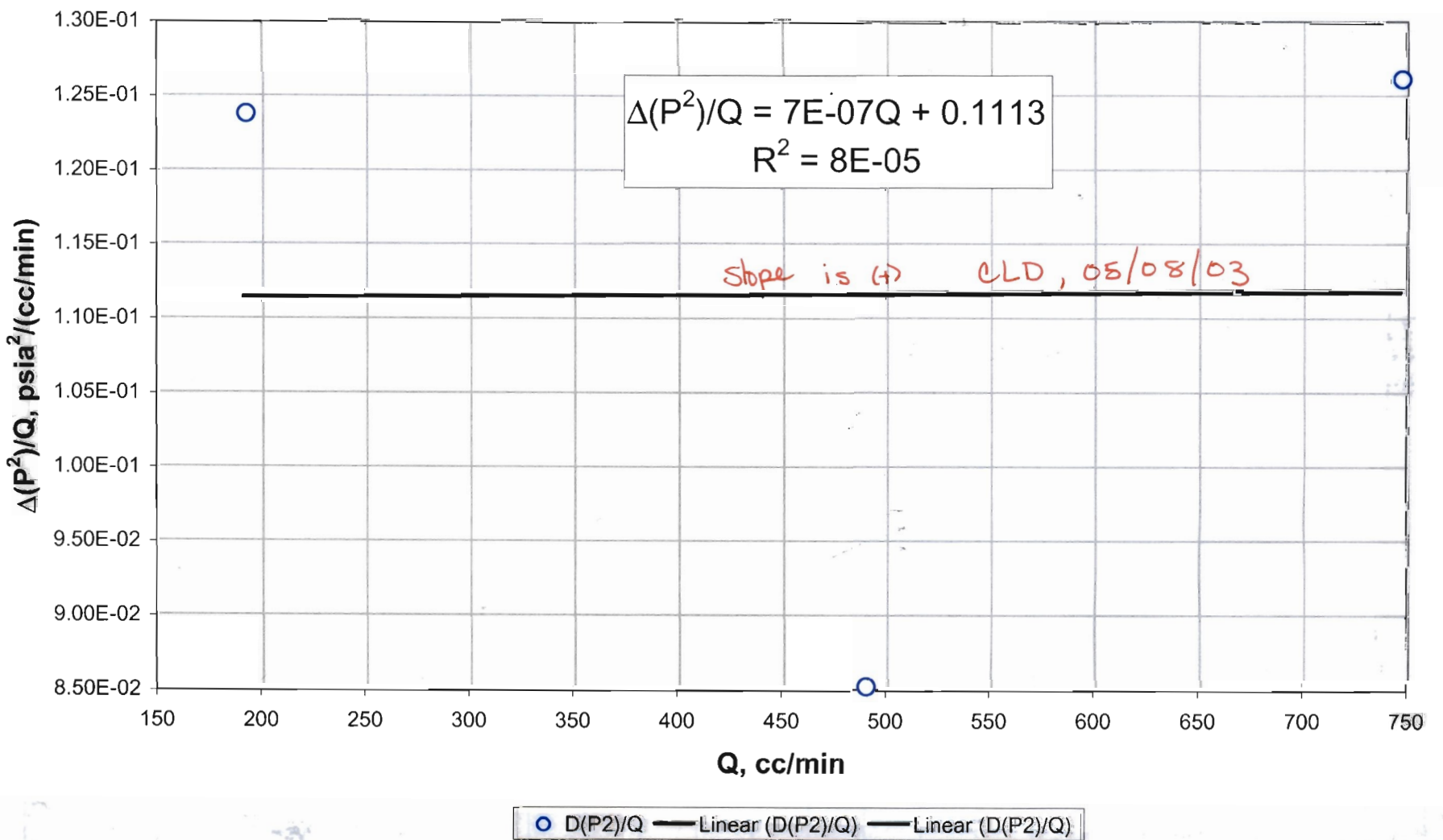


Final check for high velocity flow effects:

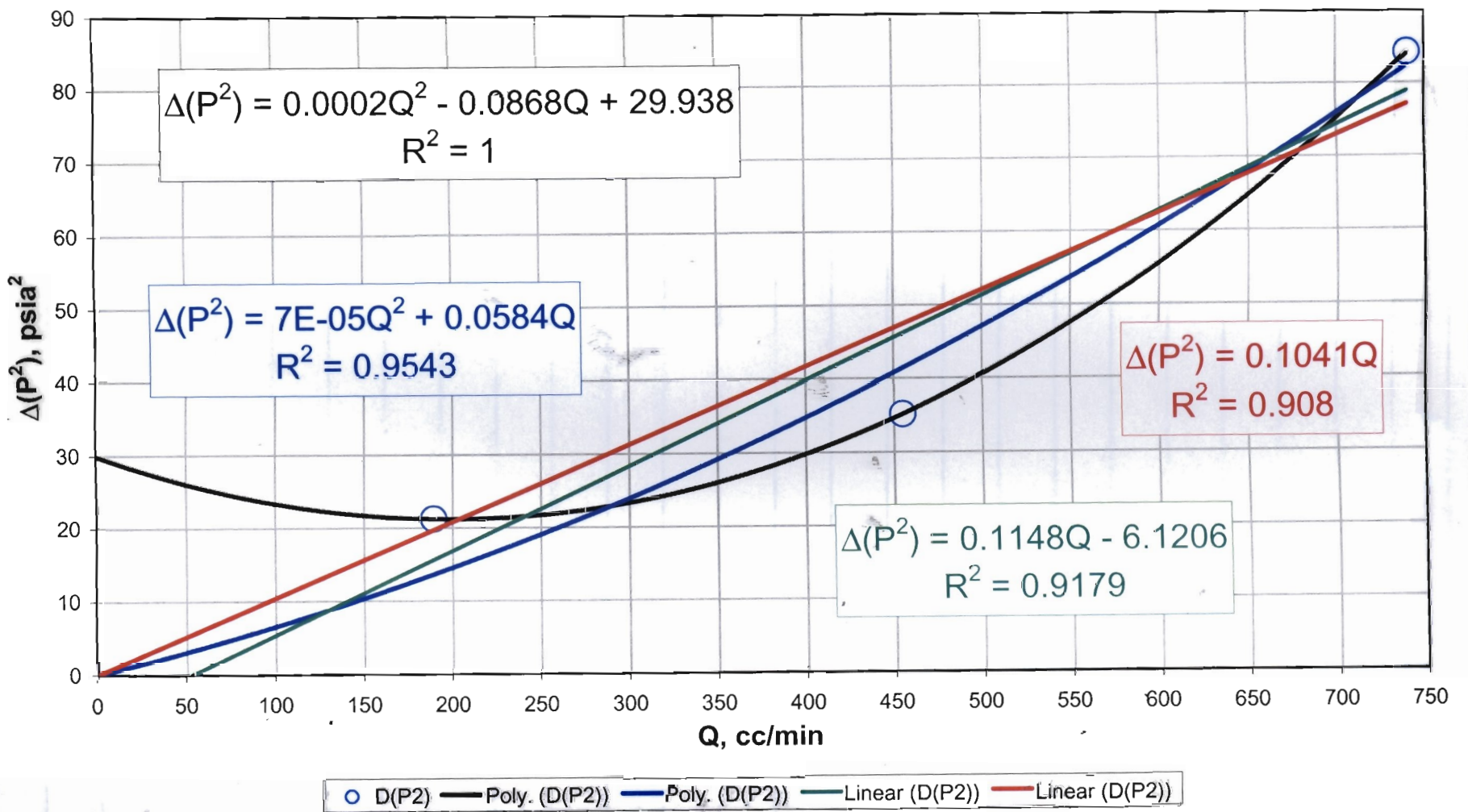
High velocity flow effects are present when the slope is non-zero and positive.

H Transect : Drillhole 116

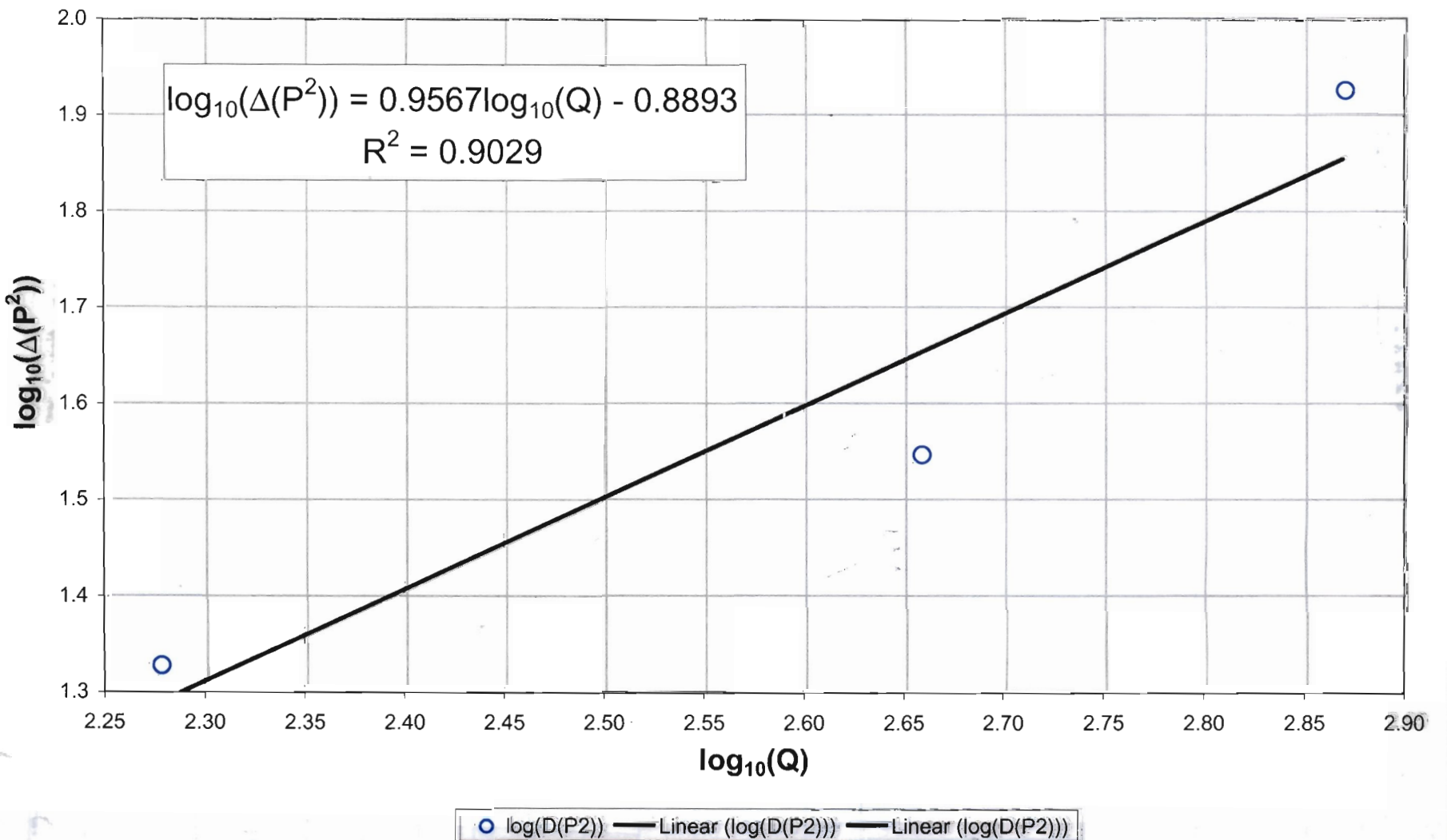
RWN, 01/02/03



Relationship between steady-state differential pressures squared and flowrate:
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 H Transect: Drillhole 117

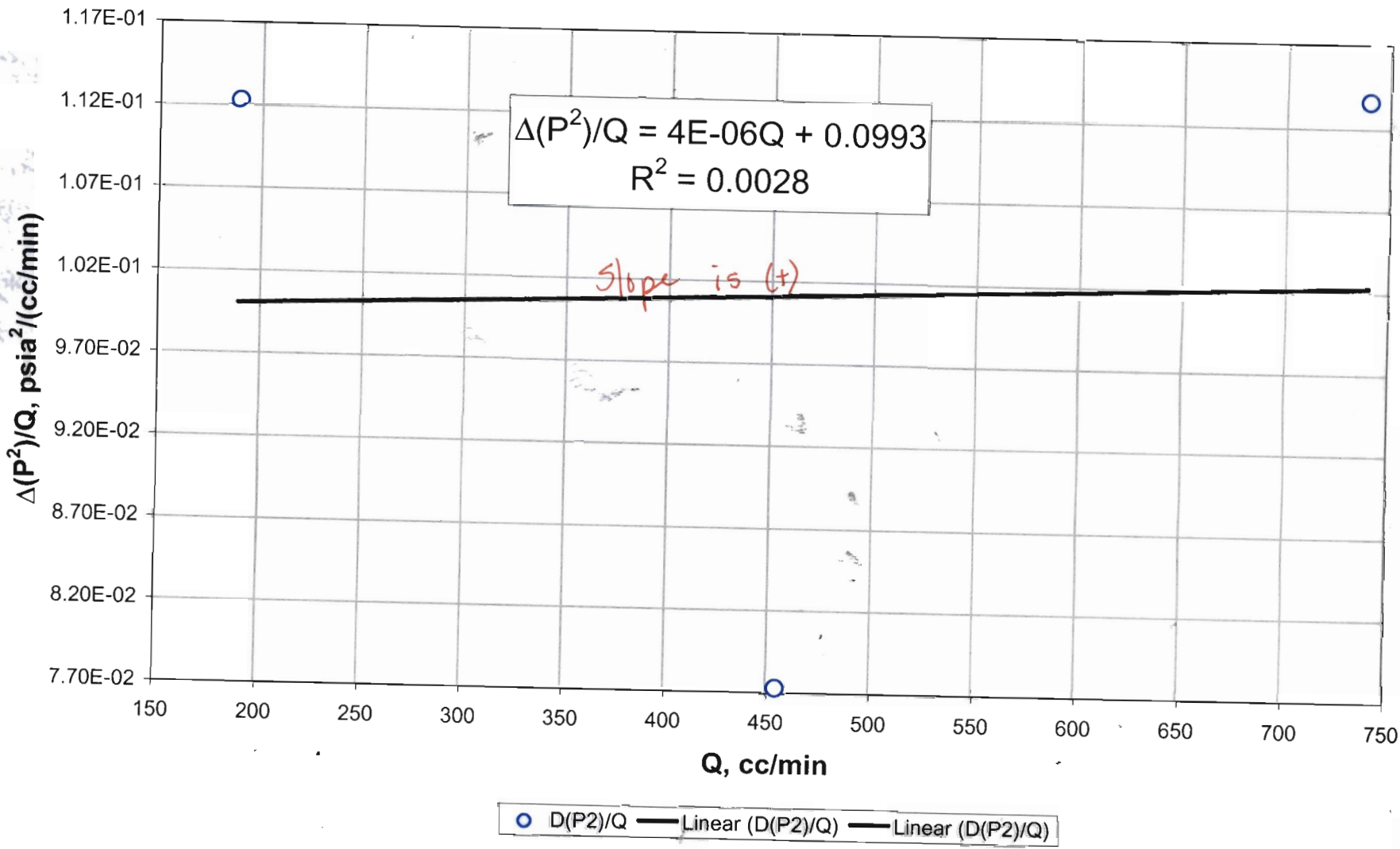


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 H Transect: Drillhole 117



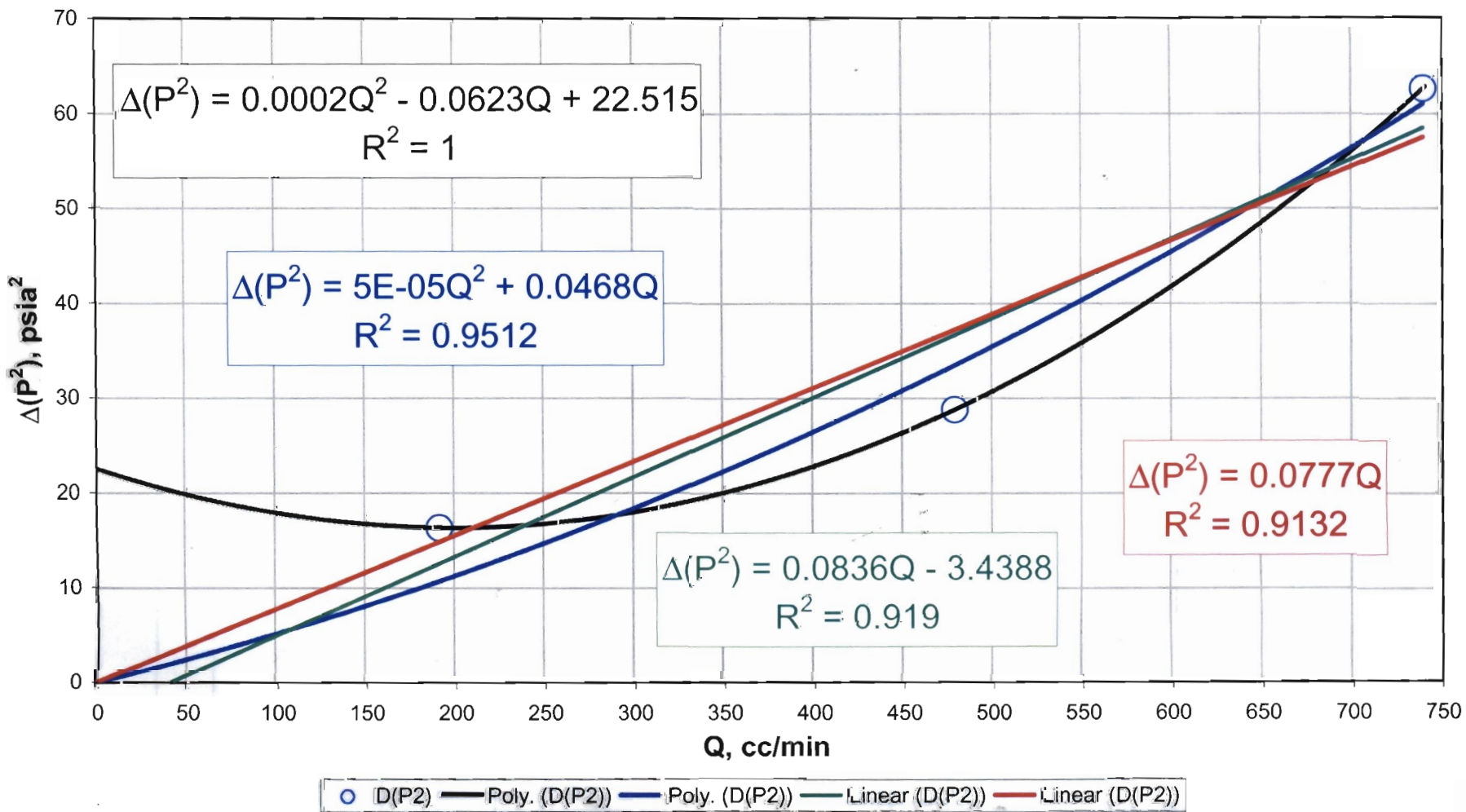
Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 H Transect : Drillhole 117

Rm, 01/02/03

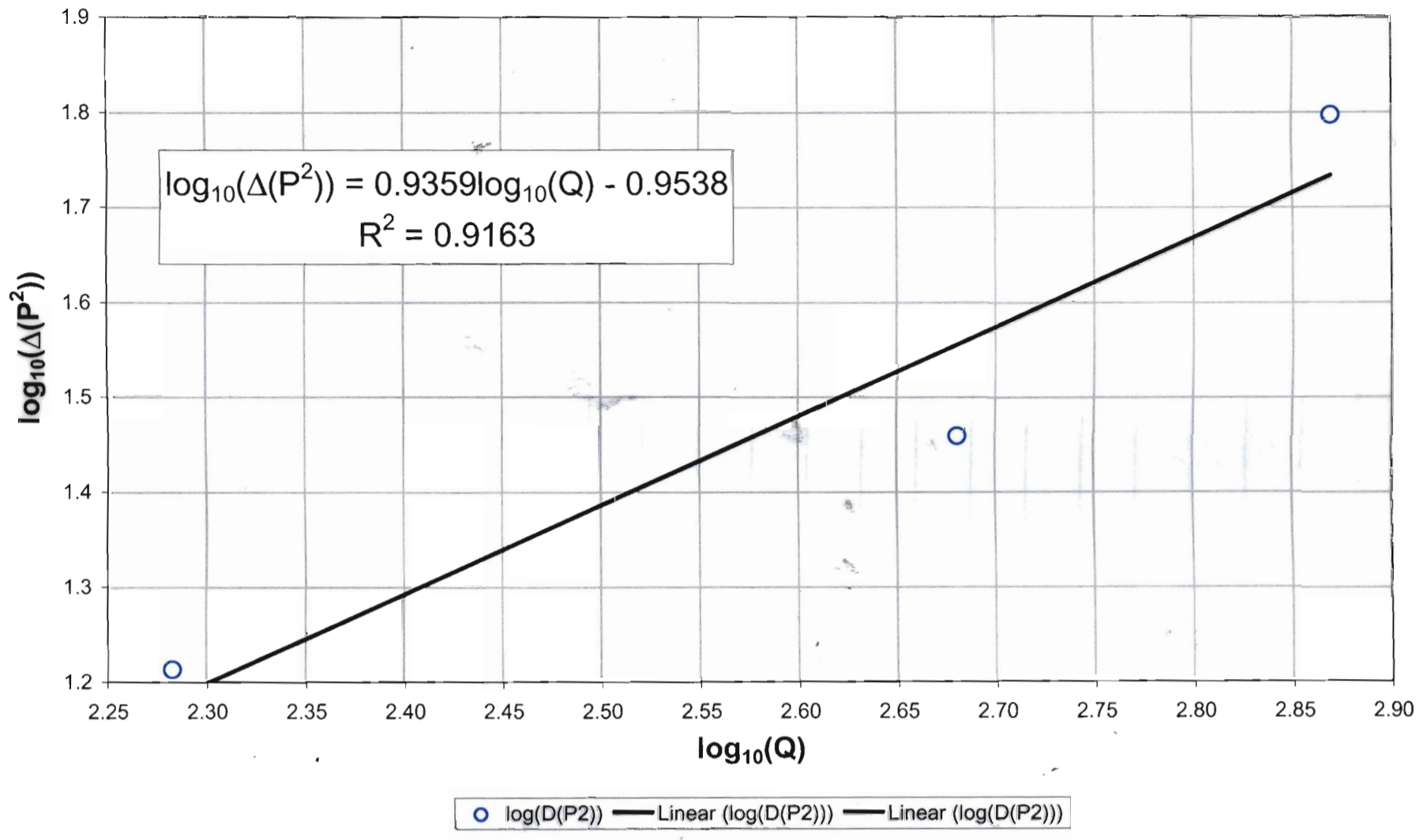


Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 118

Rm, 01/02/03

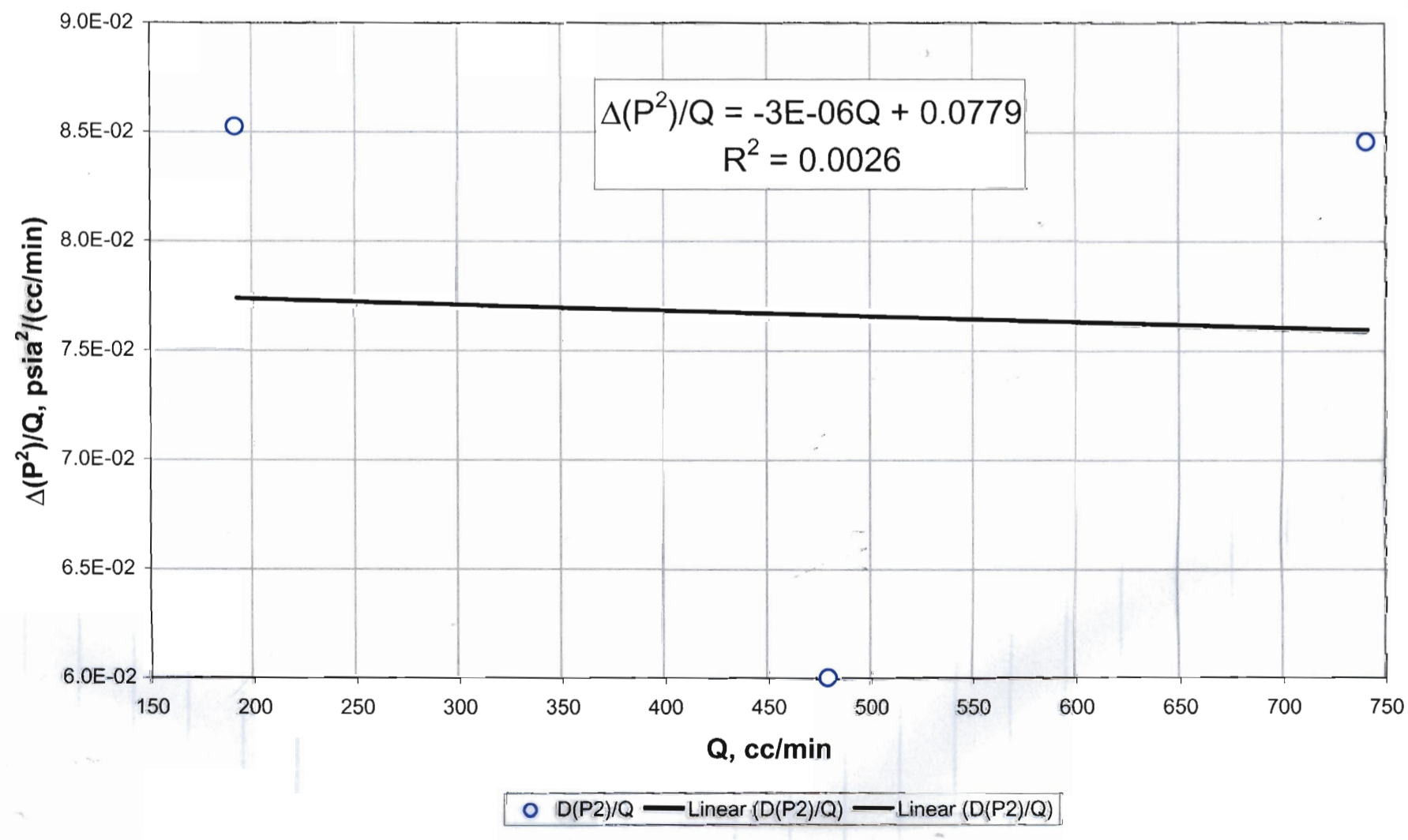


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
H Transect: Drillhole 118



RNM, 01/02/03

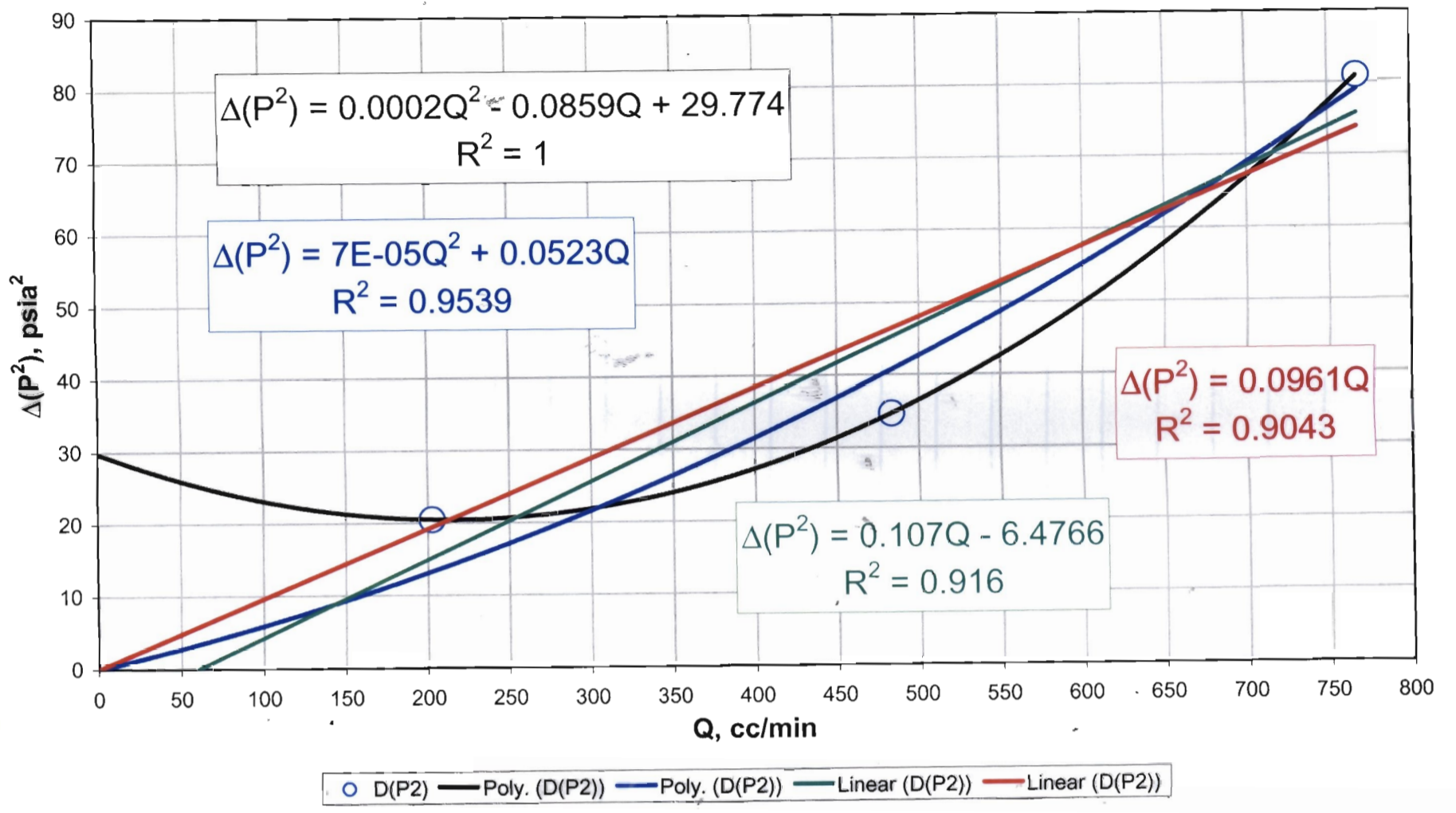
Final check for high velocity flow effects:
High velocity flow effects are present when the slope is non-zero and positive.
H Transect : Drillhole 118



RNM, 01/02/03

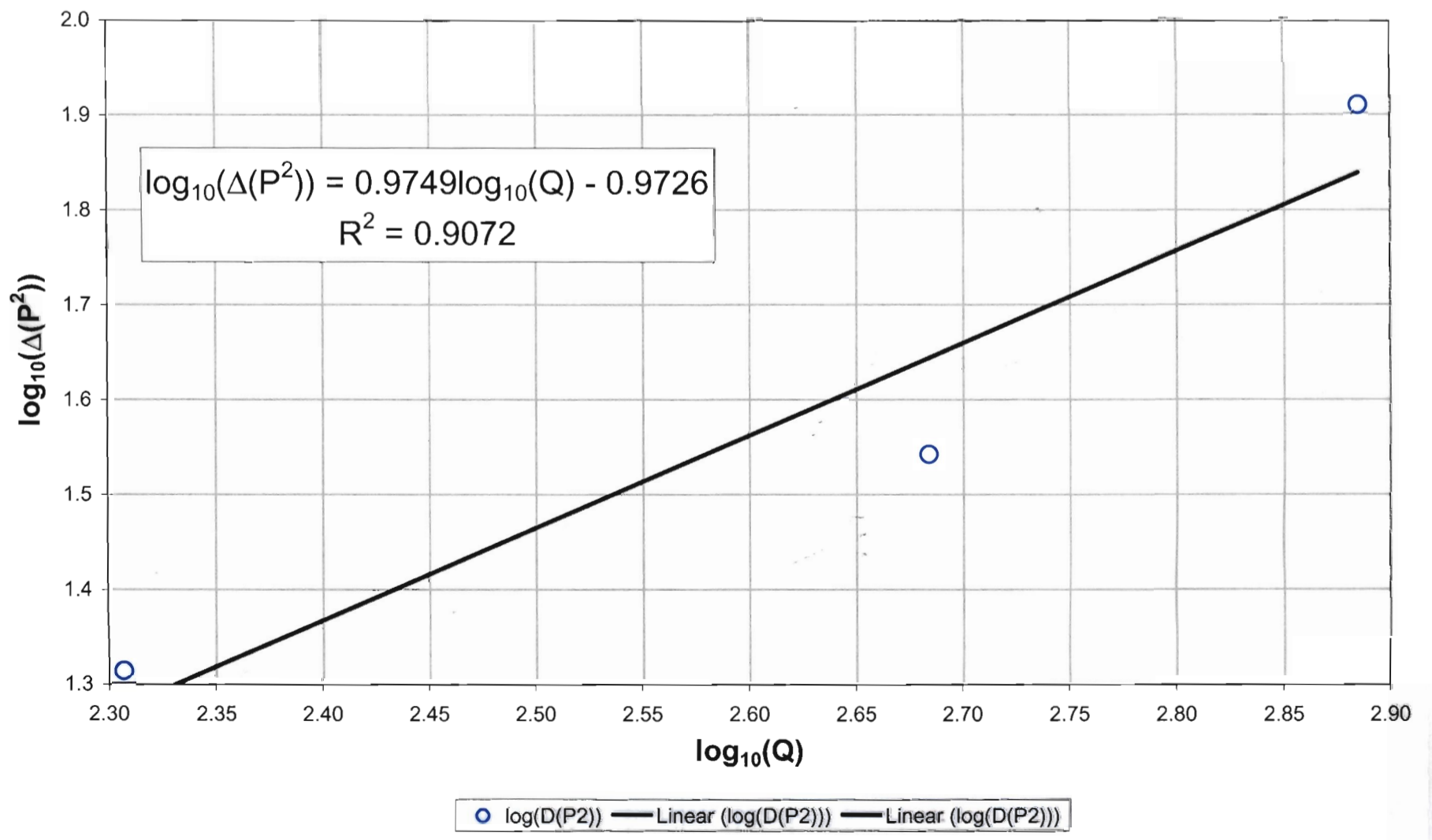
Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 119

RNM, 01/02/03



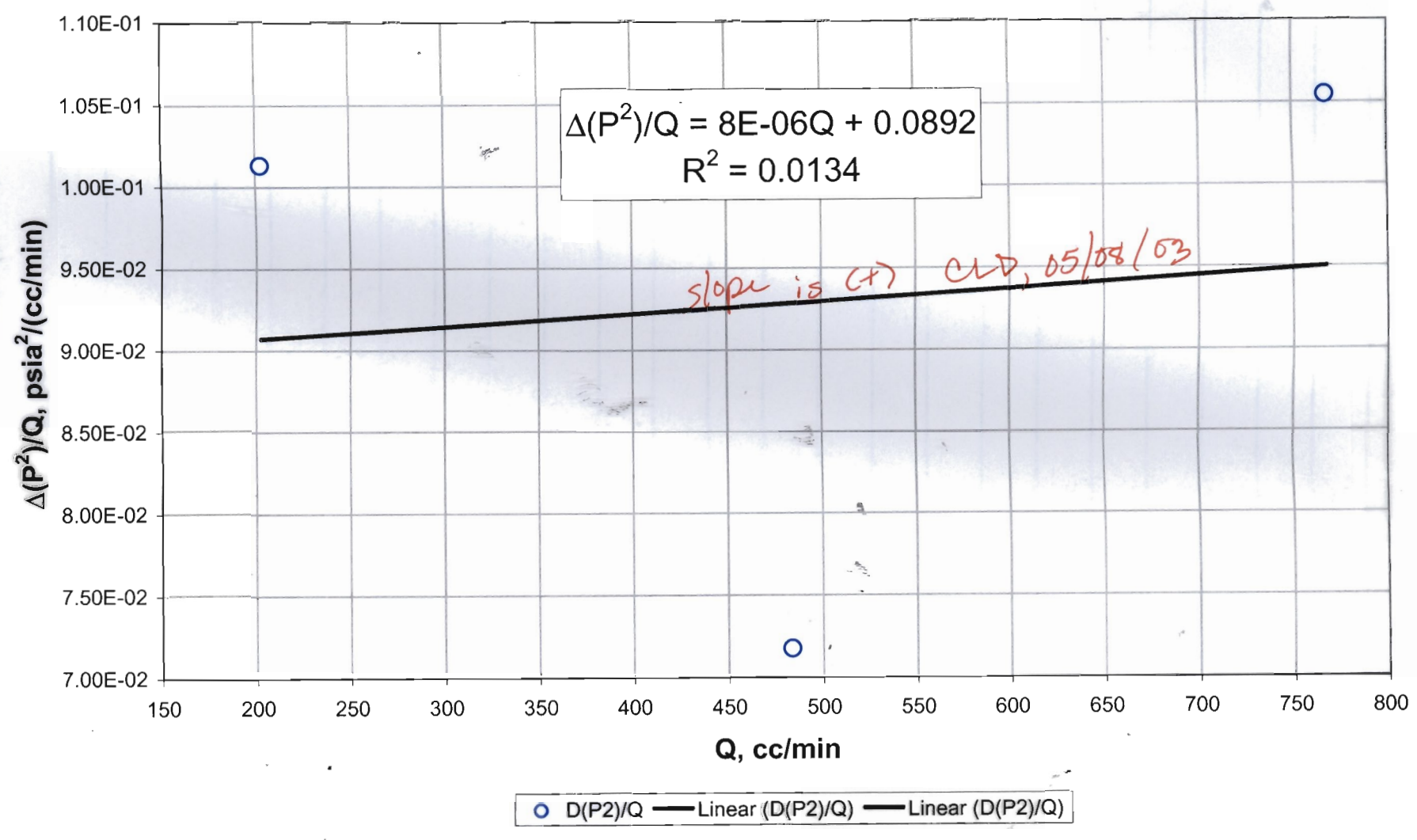
Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 H Transect: Drillhole 119

RNM, 01/02/03



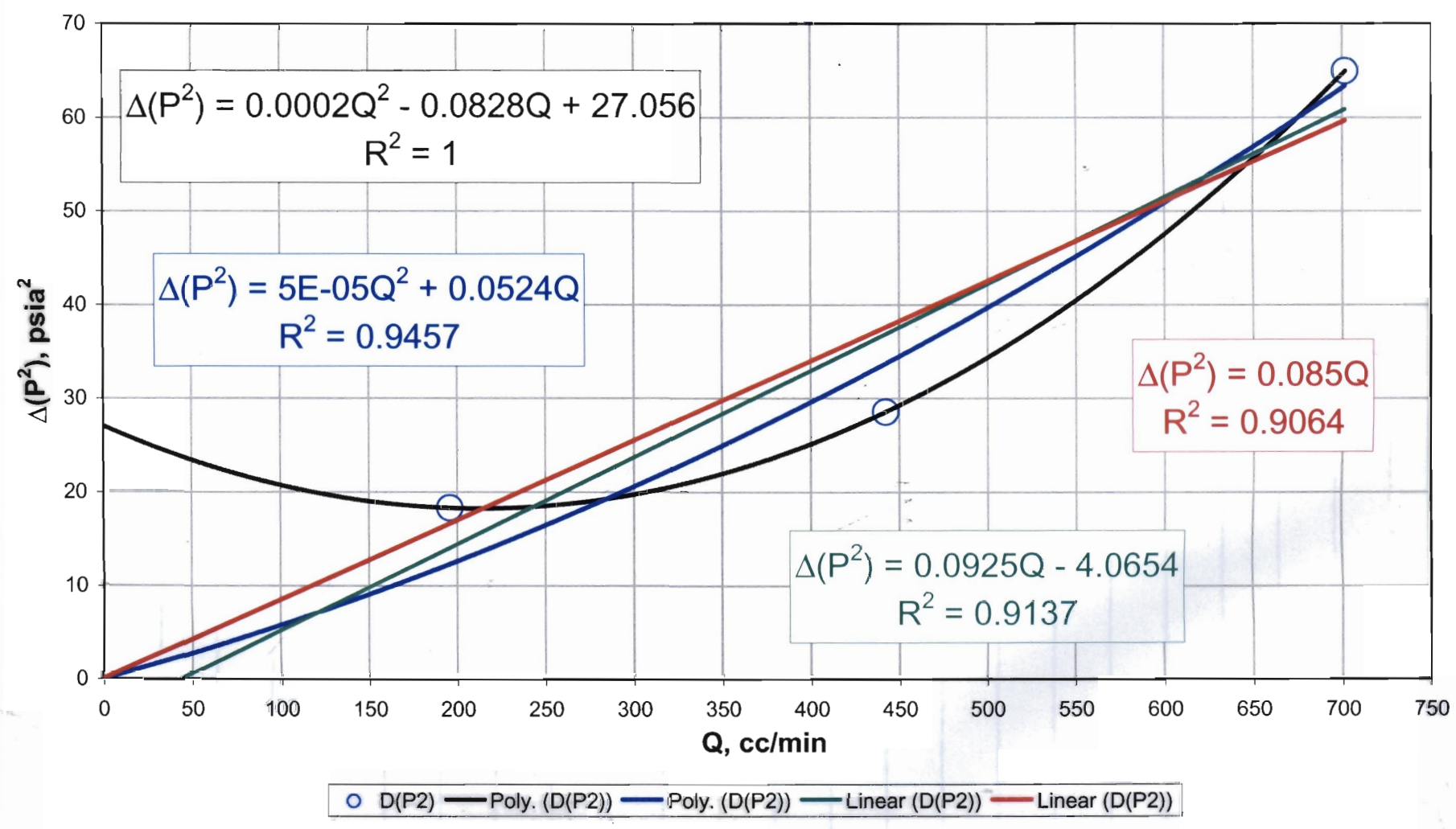
Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 H Transect : Drillhole 119

Rmn, 01/08/03



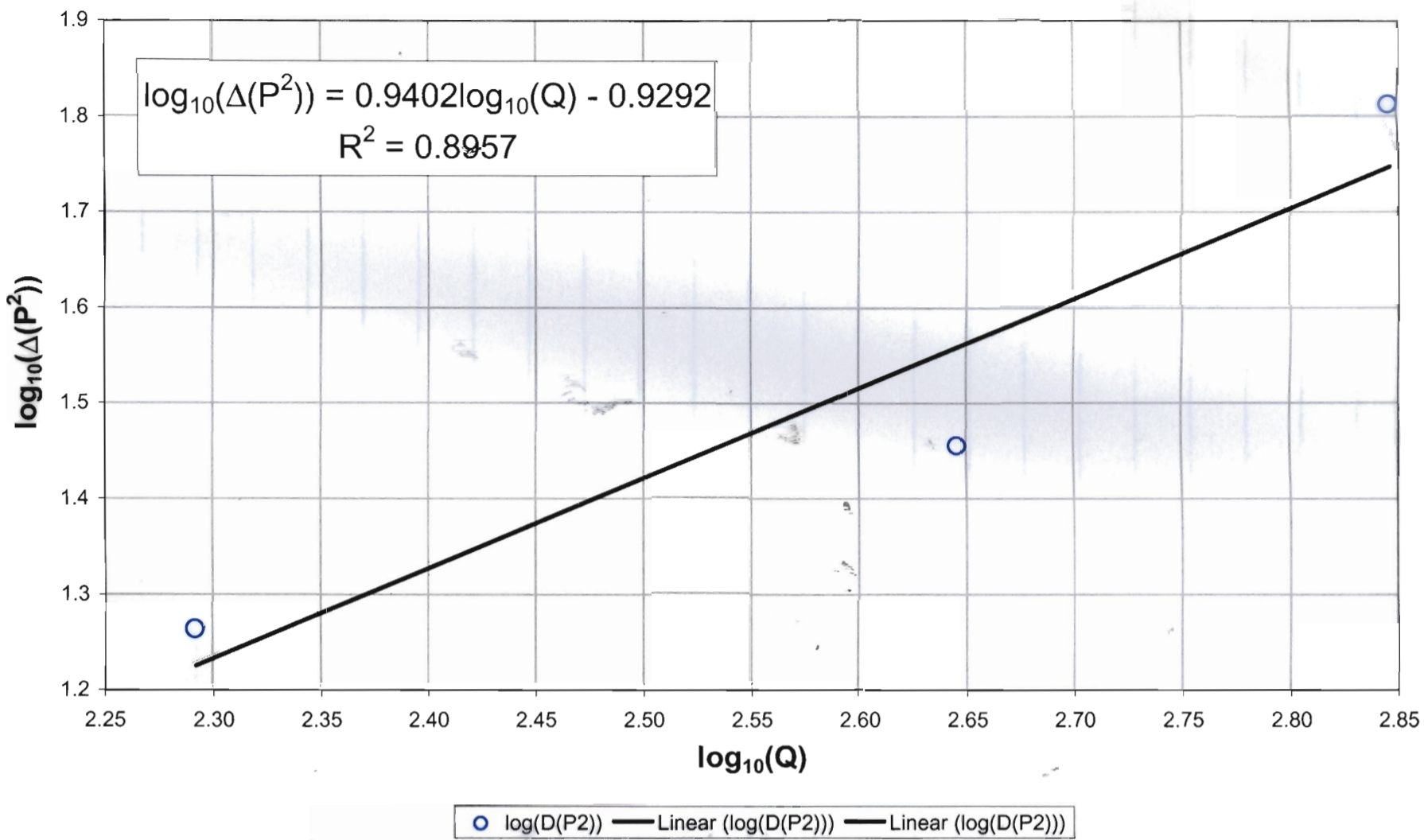
Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 120

Rmn, 01/02/03



Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)

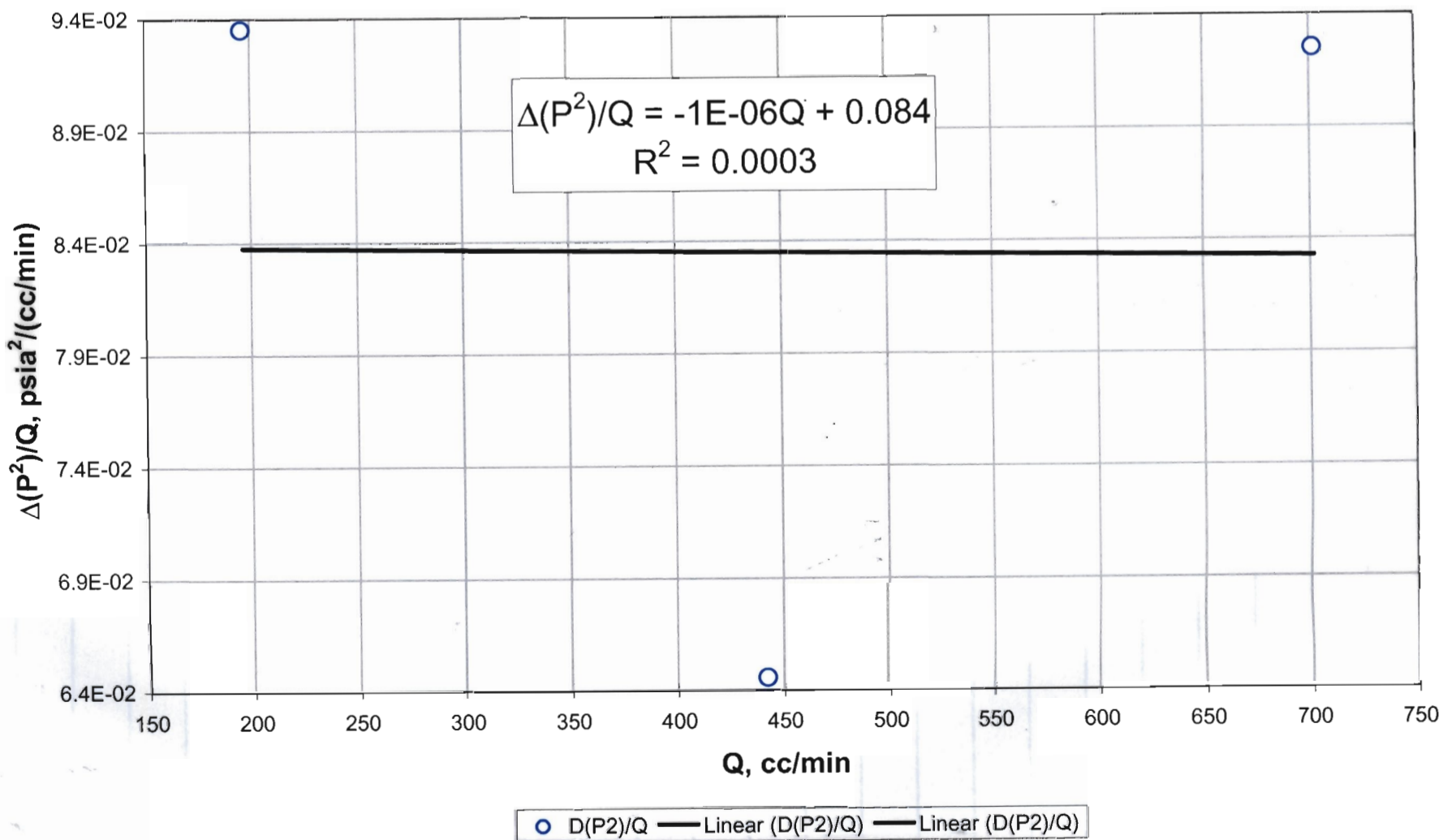
H Transect: Drillhole 120



RNM, 01/02/03

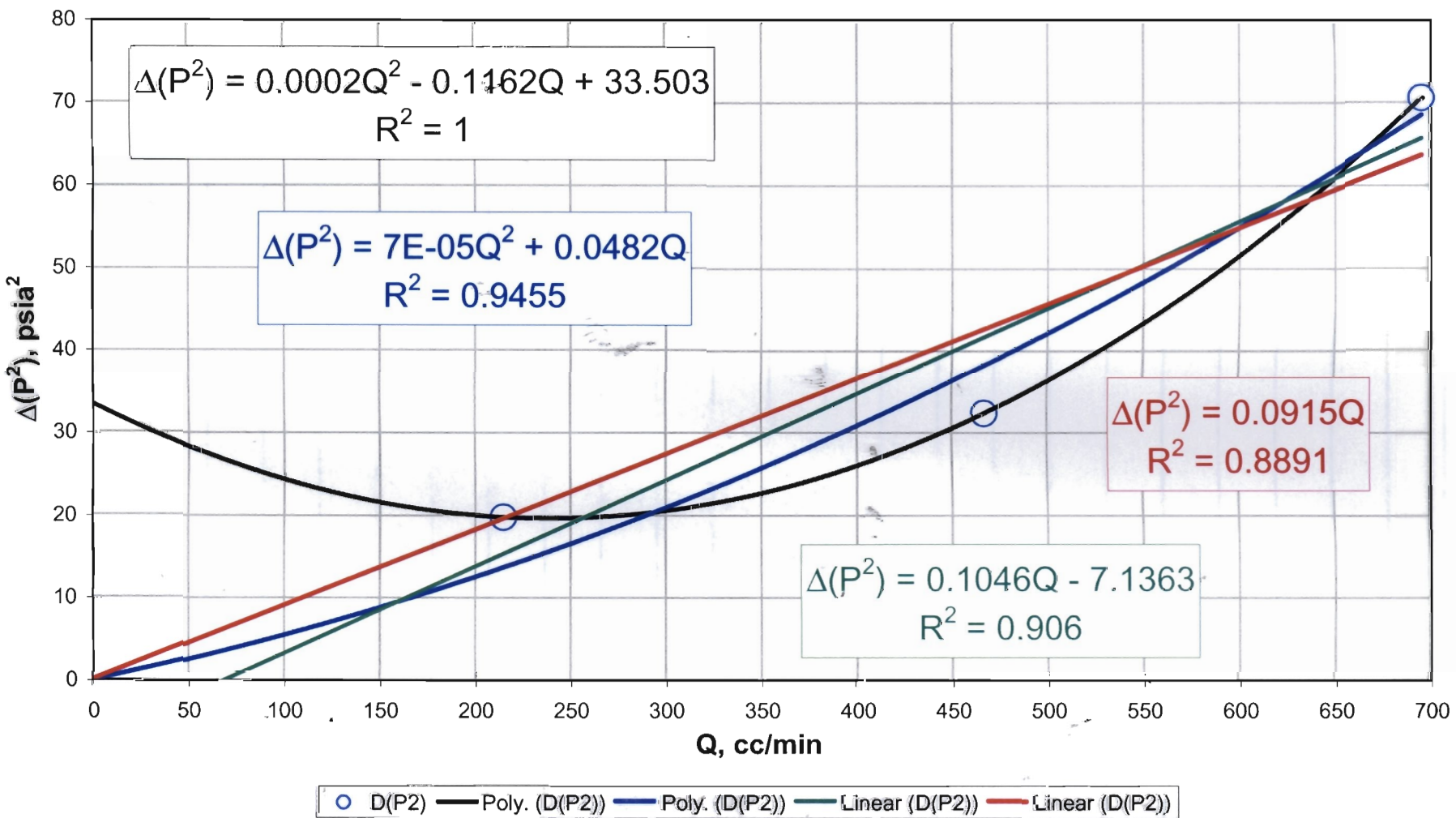
Final check for high velocity flow effects: High velocity flow effects are present when the slope is non-zero and positive.

H Transect : Drillhole 120

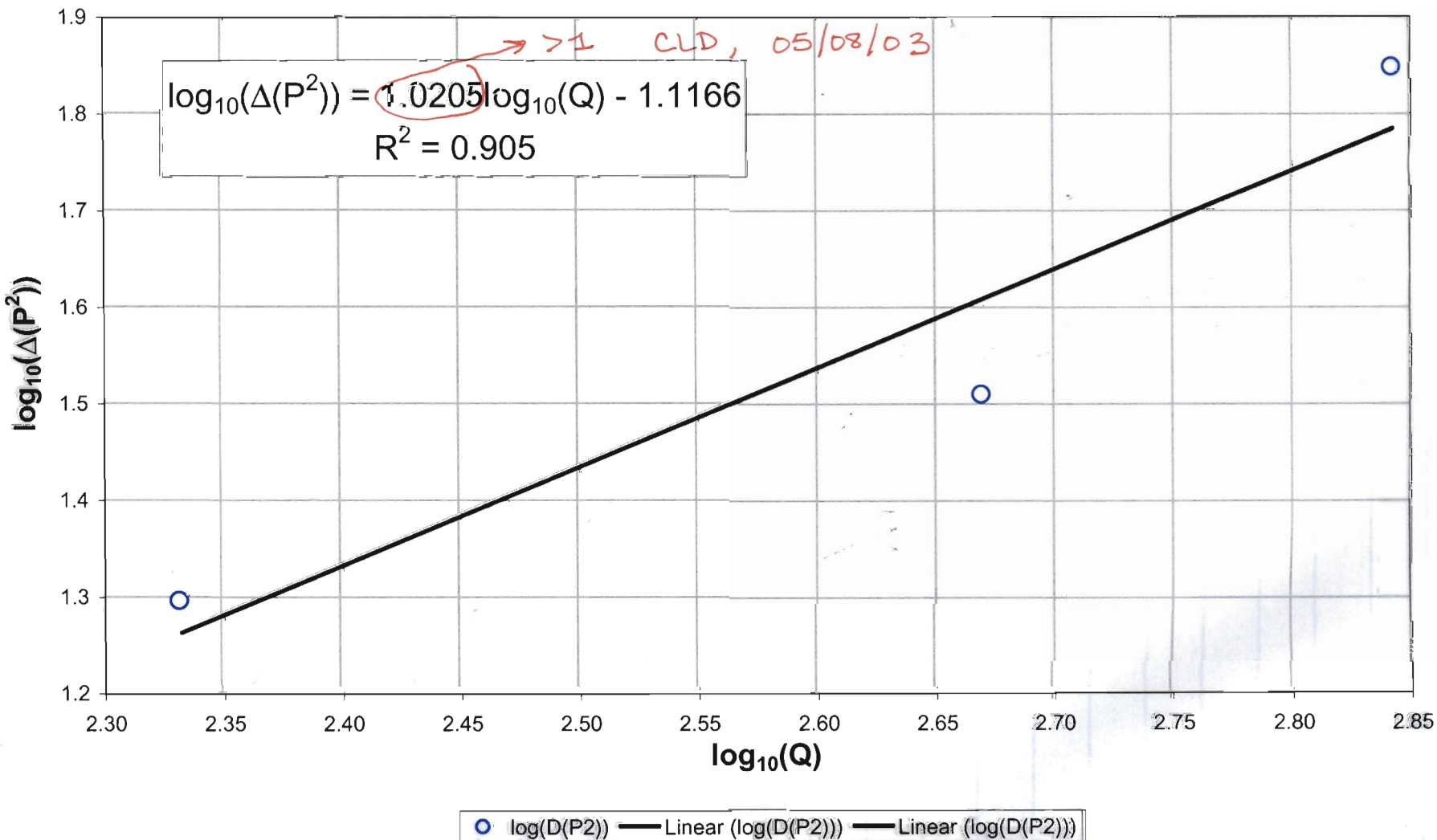


RNM, 01/02/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 121

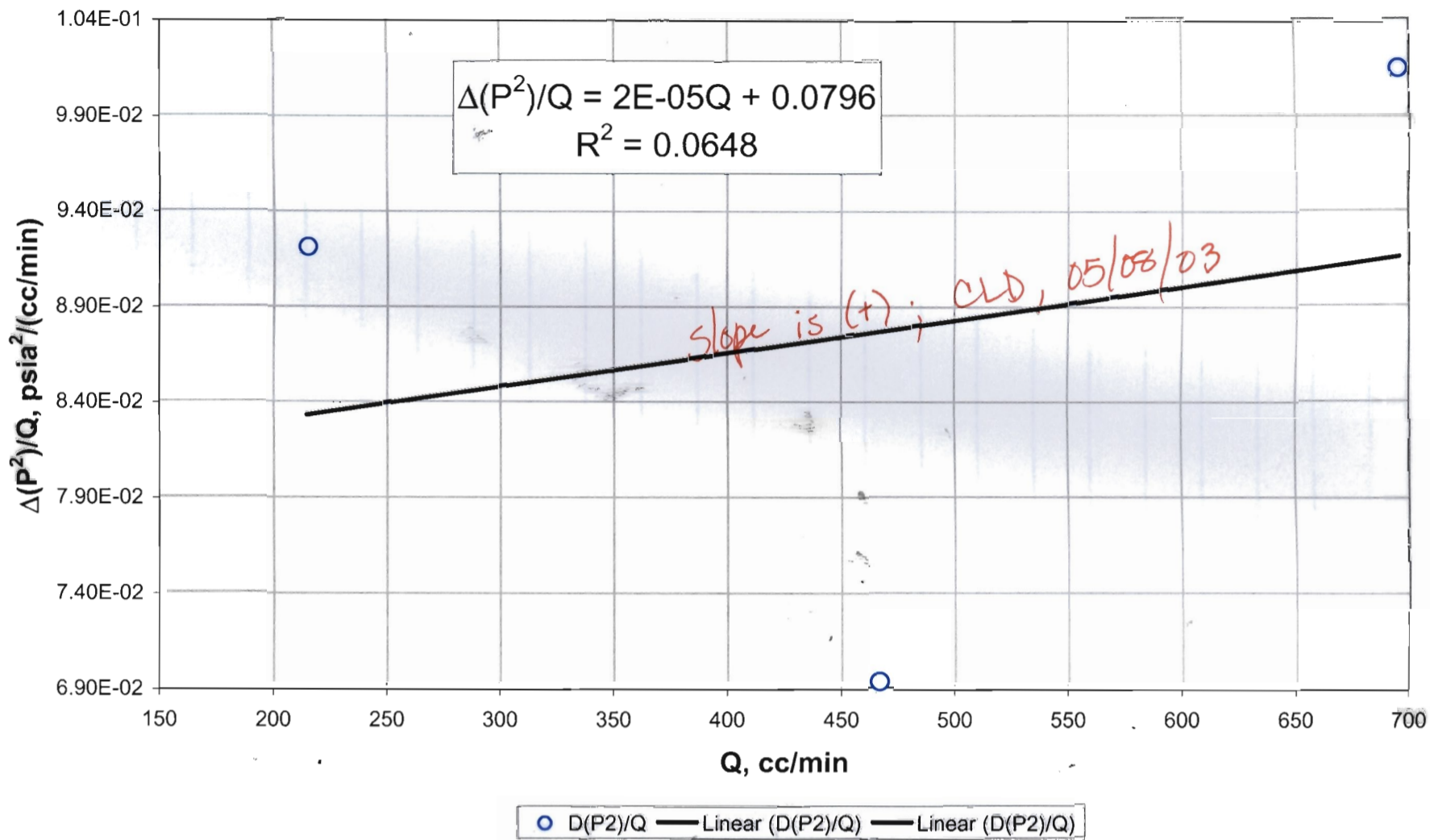


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 H Transect: Drillhole 121



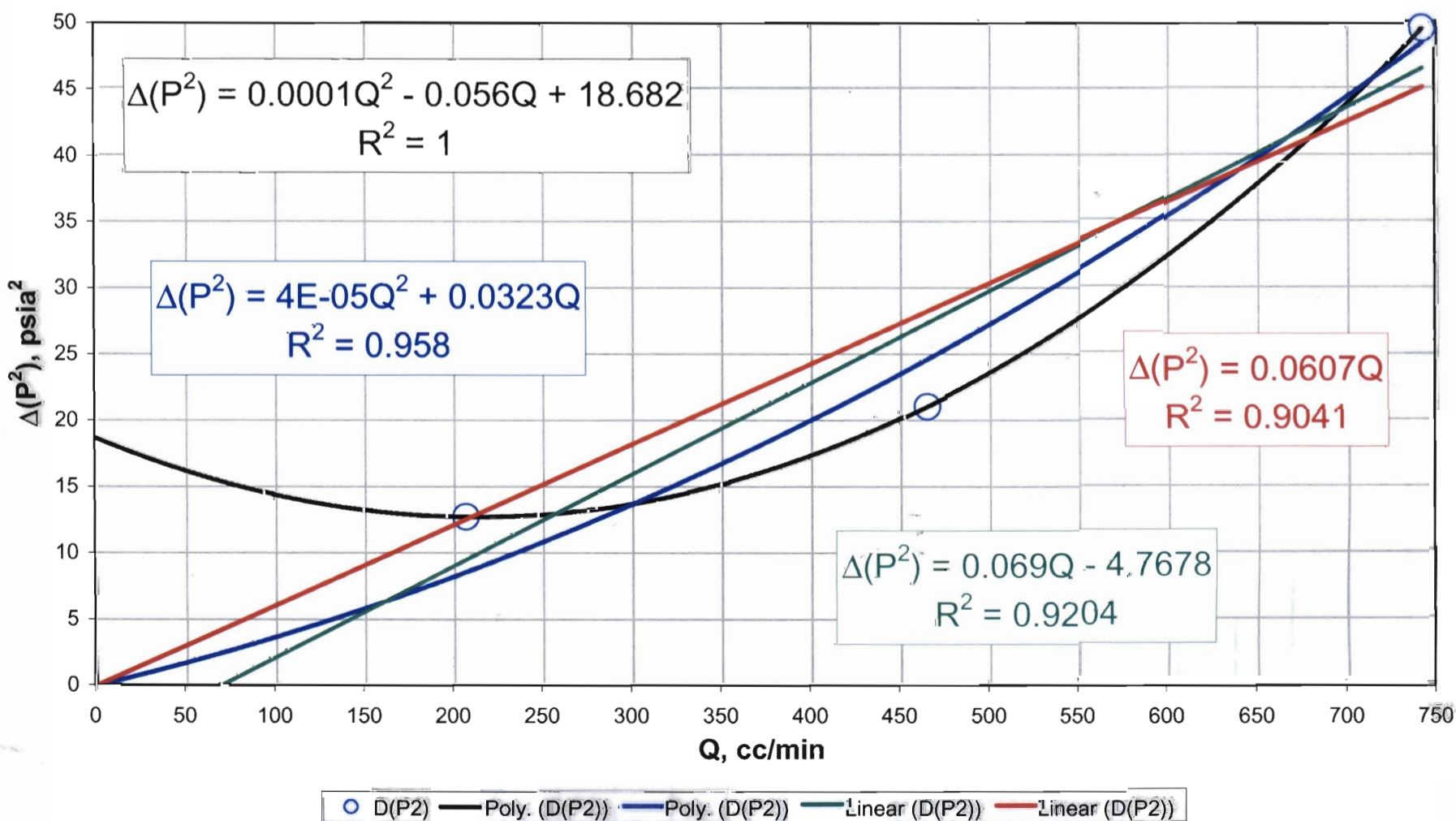
Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 H Transect : Drillhole 121

RMM, 01/02/03

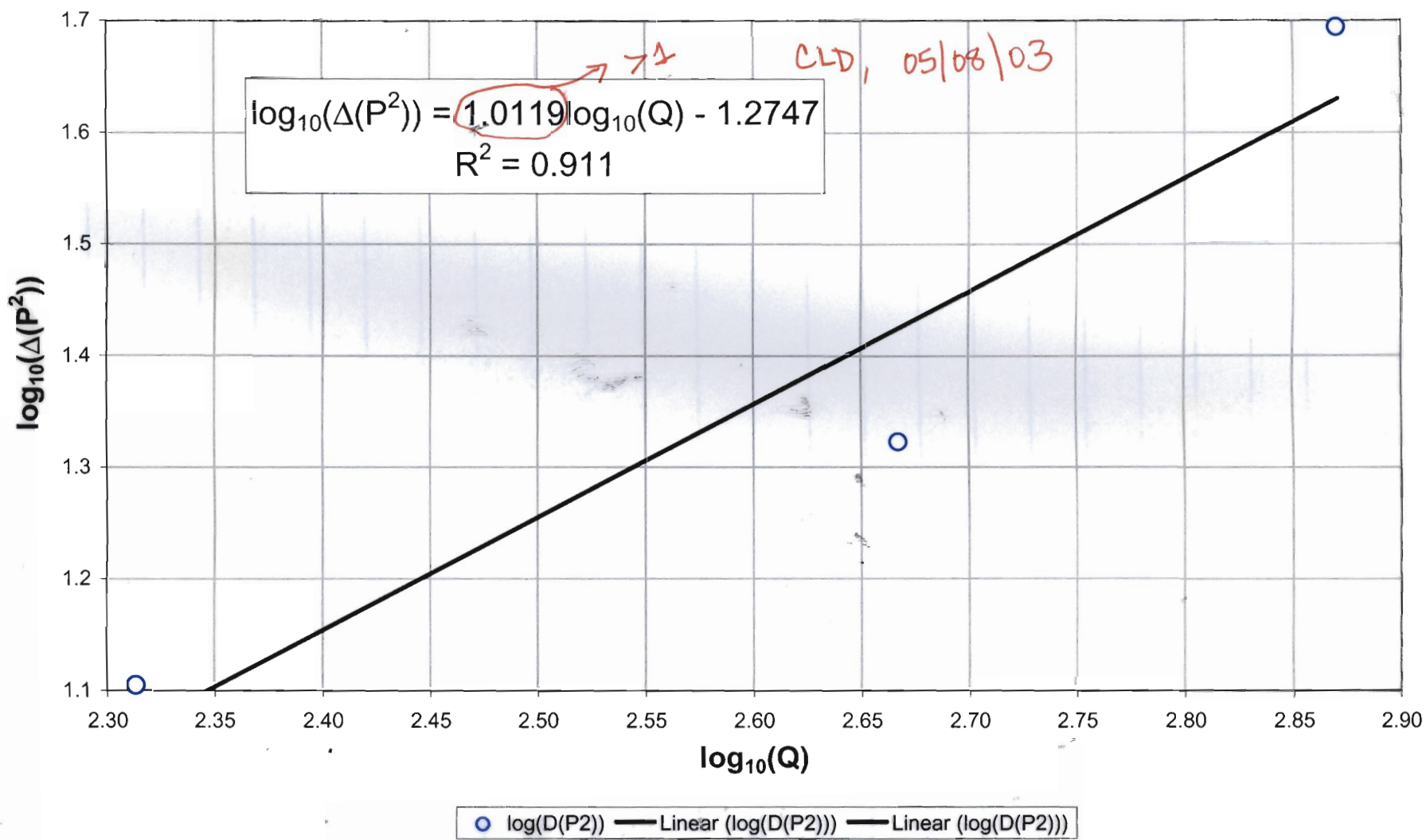


Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 H Transect: Drillhole 122

RMM, 01/02/03

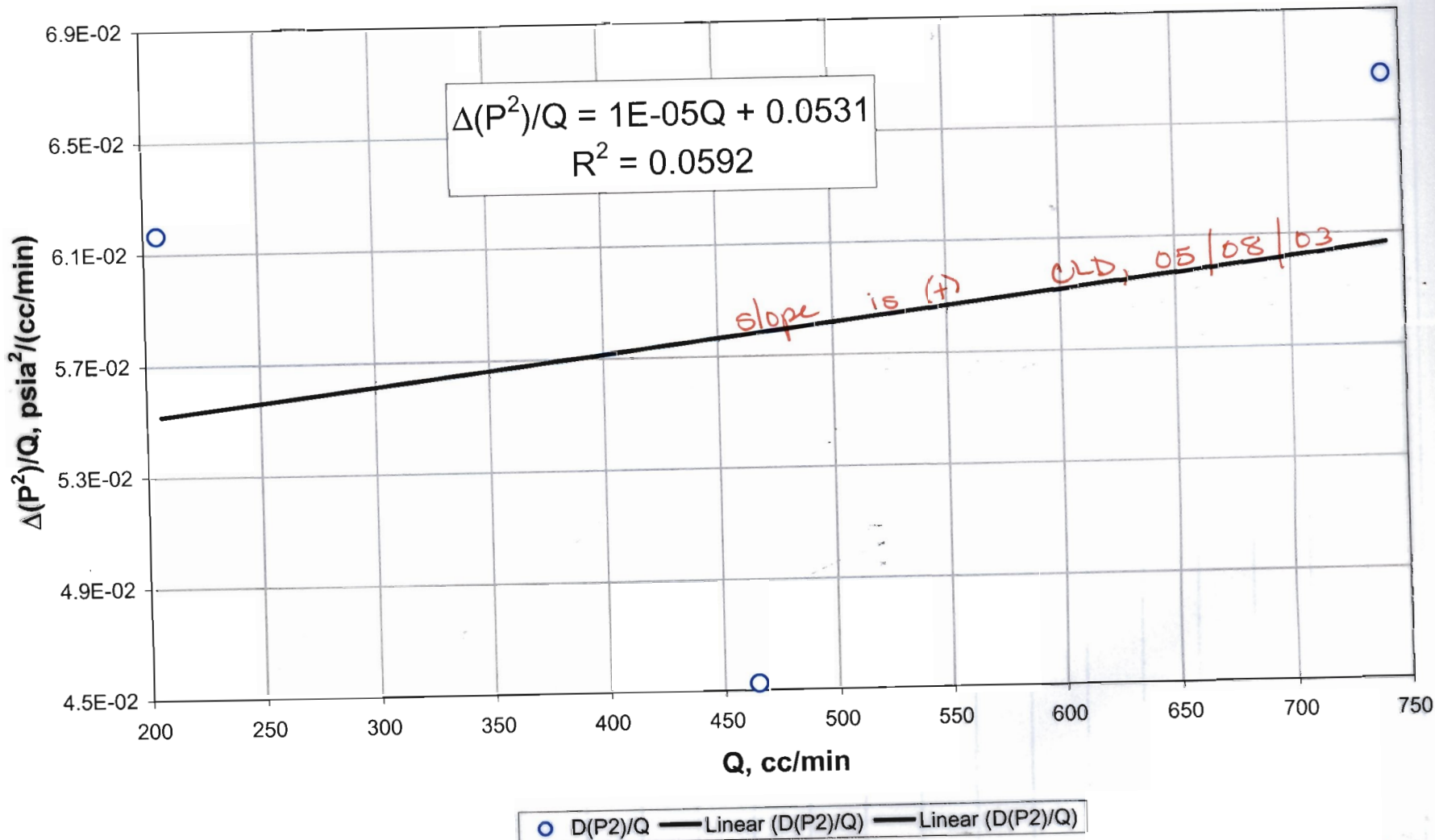


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
H Transect: Drillhole 122



RMM, 01/08/03

Final check for high velocity flow effects:
High velocity flow effects are present when the slope is non-zero and positive.
H Transect : Drillhole 122



RMM, 01/08/03

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement	Escalante, UT	-10 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	22.5	0.01759					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	11:19:55 AM	12.10	11.45	196.9	24.37	228.2902	172.3645	D-10	1
6/29/00	11:22:01 AM	12.55	11.45	480.8	24.58	323.5646	255.3005	D-10	2
6/29/00	11:24:40 AM	13.49	11.45	672.8	24.85	235.3366	201.4481	D-10	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (bottom)	Escalante, UT	-9 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	22.5	0.01759					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	11:28:06 AM	13.01	11.45	665.2	25.18	310.4711	259.5193	D-9	1
6/29/00	11:30:05 AM	12.29	11.45	470.9	25.40	420.6158	334.9807	D-9	2
6/29/00	11:32:15 AM	11.97	11.45	195.7	25.63	286.3746	224.0314	D-9	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (bottom)	Escalante, UT	#-8 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	23.0	0.01761					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	11:35:38 AM	11.99	11.45	191.4	26.01	269.3705	209.8765	D-8	1
6/29/00	11:40:00 AM	12.27	11.45	440.2	26.66	404.1354	329.4882	D-8	2
6/29/00	11:42:33 AM	13.10	11.45	672.0	27.10	296.8710	262.1127	D-8	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (bottom)	Escalante, UT	-7 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	23.0	0.01761					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	11:46:04 AM	12.87	11.45	701.2	27.64	363.9368	321.4551	D-7	1
6/29/00	11:48:38 AM	12.15	11.45	468.4	28.09	508.6699	430.6739	D-7	2
6/29/00	11:50:24 AM	11.87	11.45	191.9	28.36	351.7318	293.5403	D-7	3

RNM, 01/03/03

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement	Escalante, UT	-6 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	26.5	0.01776					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	11:53:37 AM	11.90	11.45	184.9	28.79	316.2166	234.8580	D-6	1
6/29/00	11:55:46 AM	12.21	11.45	467.2	29.14	467.5626	360.1297	D-6	2
6/29/00	11:57:17 AM	12.98	11.45	688.0	29.43	331.7628	273.9162	D-6	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (bottom)	Escalante, UT	#-5 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	26.5	0.01776					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	12:45:03 PM	12.825	11.445	670.4	32.74	364.5323	327.4164	D-5	1
6/29/00	12:48:04 PM	12.105	11.445	460.8	32.94	539.9454	460.5166	D-5	2
6/29/00	12:51:08 PM	11.815	11.445	194.7	33.23	412.3138	346.0173	D-5	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (bottom)	Escalante, UT	#-4 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	27.5	0.0178					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	1:00:38 PM	11.76	11.44	190.7	33.77	467.1939	383.8138	D-4	1
6/29/00	1:02:40 PM	12.04	11.44	475.1	33.80	603.0000	516.3550	D-4	2
6/29/00	1:04:18 PM	12.76	11.44	696.4	33.82	396.9204	353.9674	D-4	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement	Escalante, UT	-3 hole	4"	5/8"	4"	silong lu			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	27.5	0.0178					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
6/29/00	1:08:50 PM	12.88	11.44	696.0	33.78	361.8294	325.3330	D-3	1
6/29/00	1:10:29 PM	12.32	11.44	455.1	33.77	559.0091	340.7132	D-3	2
6/29/00	1:13:08 PM	12.04	11.44	187.6	33.72	419.6054	203.4075	D-3	3

RNM, 01/03/03

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	-2 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	27.5	0.0178							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/29/00	1:17:12 PM	12.03	11.44	192.1	33.65	252.2796	211.2917	D-2	1		
6/29/00	1:18:53 PM	12.50	11.44	467.8	33.58	335.2964	291.1323	D-2	2		
6/29/00	1:20:34 PM	13.70	11.44	671.6	33.54	215.1807	204.3573	D-2	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	-1 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	27.5	0.0178							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/29/00	1:25:34 PM	12.75	11.44	668.8	33.71	384.1171	341.2931	D-1	1		
6/29/00	1:29:17 PM	12.02	11.44	435.4	33.88	582.3366	490.2863	D-1	2		
6/29/00	1:31:48 PM	11.78	11.44	195.6	33.94	450.8796	372.6956	D-1	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	0 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	27.5	0.0178							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/29/00	1:36:17 PM	11.89	11.44	209.5	33.95	363.2010	303.0734	D-1	1	RNM, 01/03/03	
6/29/00	1:38:18 PM	12.22	11.44	472.5	33.92	466.0874	399.2905	D-1	2		
6/29/00	1:39:51 PM	13.15	11.44	698.0	33.88	302.3842	278.2527	D-1	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	#1 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	23.5	0.01763							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	1:33:55 PM	11.751	11.431	149.2	36.64	371.8198	403.2997	D1	1		
6/17/00	1:35:20 PM	11.781	11.431	156.8	36.58	356.7452	387.3655	D1	2		
6/17/00	1:38:43 PM	11.921	11.431	252.0	36.56	407.0612	447.0220	D1	3		
6/17/00		12.211	11.431	459.0	36.55	460.0000	517.3711	D1	4		
6/17/00	1:42:41 PM	13.181	11.431	687.6	36.45	295.3254	357.2124	D1	5		
6/17/00	1:51:35 PM	13.611	11.431	947.6	35.90	320.6495	395.0151	D1	6		
6/17/00	1:56:28 PM	12.191	11.431	452.0	35.64	464.1354	509.4656	D1	7		
6/17/00	1:58:54 PM	11.981	11.431	305.8	35.44	437.4291	469.6266	D1	8		
6/17/00	2:03:09 PM	11.901	11.431	245.8	35.35	412.7229	439.1720	D1	9		

RNM, 01/03/03

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	#2 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	23.5	0.01763							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	2:09:08 PM	11.731	11.421	137.0	35.22	350.9843	367.3030	D2	1		
6/17/00	2:11:32 PM	11.891	11.421	203.4	35.08	341.2189	360.6461	D2	2		
6/17/00	2:12:56 PM	12.221	11.421	424.7	35.08	412.8481	448.3365	D2	3		
6/17/00	2:14:32 PM	12.971	11.421	585.6	34.88	284.7957	326.3635	D2	4		
6/17/00	2:17:22 PM	13.461	11.421	722.8	34.73	261.8106	310.0377	D2	5		
6/17/00	2:21:22 PM	11.891	11.421	211.7	34.44	354.4051	368.5146	D2	6		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	#3 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	23.5	0.01763							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	2:29:47 PM	11.821	11.421	200.0	34.93	392.5504	413.6938	D3	1		
6/17/00	2:31:10 PM	11.911	11.421	273.8	35.13	437.3249	466.7039	D3	2		
6/17/00	2:33:54 PM	12.201	11.421	482.4	35.39	478.6316	526.5040	D3	3		
6/17/00	2:36:22 PM	13.471	11.421	883.6	35.59	317.1193	386.6336	D3	4		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	#4 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	25.5	0.01771							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	2:46:37 PM	12.801	11.421	581.2	35.85	317.9815	344.0275	D4	1		
6/17/00	2:49:01 PM	12.131	11.421	430.4	35.92	470.5238	483.5514	D4	2		
6/17/00	2:50:51 PM	12.011	11.421	343.6	35.95	454.3387	462.6936	D4	3		
6/17/00	2:58:16 PM	11.811	11.421	194.6	36.10	392.7412	394.8291	D4	4		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	#5 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.5	0.01775							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	5:04:31 PM	12.181	11.391	523.0	36.93	512.9728	525.3372	D5	1		
6/17/00		11.691	11.391	269.0	36.80	700.0000	694.9519	D5	2		
6/17/00	5:18:53 PM	11.771	11.391	346.9	36.79	719.3107	709.7175	D5	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 6 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.5	0.01775							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:55:12 PM	12.001	11.401	236.7	36.98	308.1515	311.0829	D6	1		
6/17/00	4:57:53 PM	12.181	11.401	349.3	36.96	347.1726	355.4970	D6	2		
6/17/00	4:59:59 PM	12.851	11.401	522.7	36.95	271.9144	293.4851	D6	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 7 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.5	0.01775							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:46:06 PM	12.181	11.401	380.5	36.99	378.2192	387.5649	D7	1		
6/17/00	4:48:10 PM	13.021	11.401	562.8	36.96	260.2780	284.6635	D7	2		
6/17/00	4:50:49 PM	11.961	11.401	244.3	36.95	341.2996	343.1666	D7	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 8 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.5	0.01775							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:35:28 PM	11.801	11.401	269.1	36.95	529.8834	525.7257	D8	1		
6/17/00	4:37:30 PM	12.201	11.401	522.7	36.96	506.1097	519.0854	D8	2		
6/17/00	4:39:43 PM	11.931	11.401	384.8	36.96	568.7456	570.5763	D8	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 9 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.5	0.01775							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:27:05 PM	12.521	11.401	611.6	36.87	417.3455	438.1894	D9	1		
6/17/00	4:28:53 PM	11.801	11.401	332.7	36.90	654.9910	649.0980	D9	2		
6/17/00	4:31:17 PM	11.741	11.401	275.4	36.90	639.4767	630.5409	D9	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#10 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26.25	0.01774							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:09:00 PM	12.621	11.401	639	37.00	398.0000	427.1662	D10	1		
6/17/00		11.911	11.401	414	37.00	637.0000	643.8284	D10	2		
6/17/00		11.751	11.401	274	36.90	616.0000	615.1269	D10	3		
6/17/00		11.701	11.401	229	36.90	602.0000	598.5267	D10	4		
6/17/00	4:31:00 PM	12.541	11.401	612	36.90	410.0000	435.3256	D10	5		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 11 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26	0.01773							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	4:03:46 PM	11.741	11.401	206.0	36.95	478.4076	480.8256	D11	1		
6/17/00	4:06:12 PM	11.951	11.401	392.5	36.95	558.5457	571.2842	D11	2		
6/17/00	4:08:28 PM	12.341	11.401	522.1	36.98	427.7881	451.9667	D11	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 12 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26	0.01773							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	3:18:19 PM	12.856	11.406	621.2	36.41	323.1317	349.9000	D12	1		
6/17/00	3:20:21 PM	12.146	11.406	469.5	36.42	492.6442	504.4637	D12	2		
6/17/00	3:22:50 PM	11.966	11.406	343.8	36.48	480.3798	485.4074	D12	3		
6/17/00	3:26:45 PM	11.786	11.406	200.6	36.53	416.2575	414.8641	D12	4		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
check effect of flow rate	Escalante, UT	# 13 hole	4"	5/8"	4"	fred molz					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	6.752	26	0.01773							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/17/00	3:04:39 PM	11.716	11.406	184.0	36.21	468.9246	461.0194	D13	1		
6/17/00	3:08:09 PM	11.766	11.406	245.1	36.25	536.8194	530.5114	D13	2		
6/17/00	3:10:27 PM	11.996	11.406	440.5	36.28	583.0907	587.7942	D13	3		
6/17/00	3:13:09 PM	12.316	11.406	522.0	36.32	442.0912	457.9035	D13	4		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#14 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	18.5	0.01743					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	9:38:37 AM	11.786	11.426	147.8	19.32	308.5438	235.5612	D14	1
6/18/00		12.186	11.426	338.0	20.00	329.0000	268.4926	D14	2
6/18/00	9:45:40 AM	12.436	11.426	489.0	20.20	354.0000	298.1149	D14	3
6/18/00	9:48:45 AM	13.186	11.426	711.2	20.50	287.9314	259.5793	D14	4

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#15 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	18.5	0.01743					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	9:58:05 AM	12.606	11.426	718.4	21.45	445.4865	400.6544	D15	1
6/18/00	10:00:45 AM	11.986	11.426	445.2	21.72	597.3373	517.0512	D15	2
6/18/00	10:02:50 AM	11.876	11.426	311.2	21.92	522.3653	451.8721	D15	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#16 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	18.5	0.01743					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	10:07:55 AM	11.876	11.426	293.0	22.32	492.4827	433.2087	D16	1
6/18/00	10:09:38 AM	11.986	11.426	427.9	22.47	575.5864	514.1194	D16	2
6/18/00	10:11:24 AM	12.566	11.426	672.8	22.61	434.2570	408.7739	D16	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#17 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	19.5	0.01747					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	10:14:37 AM	13.296	11.426	677.2	22.85	259.5697	247.5155	D17	1
6/18/00	10:18:38 AM	12.386	11.426	456.6	23.13	353.9933	318.2578	D17	2
6/18/00	10:21:17 AM	12.106	11.426	254.6	23.28	282.0491	249.3893	D17	3
6/18/00	10:40:01 AM	12.086	11.426	237.8	24.15	272.4443	248.7606	D17	4

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Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#18 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	19.5	0.01747					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	10:46:32 AM	12.366	11.426	303.7	24.39	241.6842	227.7878	D18	1
6/18/00	10:49:41 AM	12.686	11.426	483.2	24.48	283.2318	274.7026	D18	2
6/18/00	10:57:11 AM	14.076	11.426	751.2	24.76	198.3675	215.4611	D18	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#19 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	19.5	0.01747					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/18/00	11:01:20 AM	13.396	11.426	742.8	25.07	269.8317	283.7278	D19	1
6/18/00	11:03:24 AM	12.266	11.426	437.1	25.22	389.9521	377.8778	D19	2
6/18/00	11:05:22 AM	12.046	11.426	266.0	25.38	324.6351	310.7977	D19	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#20 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	17.0	0.01736					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/20/00	10:48:32 AM	11.925	11.435	171.7	18.04	261.2084	204.5702	D20	1
6/20/00	10:50:25 AM	12.545	11.435	481.5	18.24	315.3902	262.4011	D20	2
6/20/00	10:52:03 AM	13.055	11.435	606.4	18.44	266.7878	233.2594	D20	3

Sample Name	Field	Well	Depth	Diameter	Length	Operator			
check effect of flow rate	Escalante, UT	#21 hole	4"	5/8"	4"	fred molz			
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)					
0.92	0.92	6.752	18.0	0.0174					
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading
6/20/00	11:02:01 AM	13.37	11.44	725.2	19.74	265.7070	239.8691	D21	1
6/20/00	11:03:28 AM	12.52	11.44	495.5	19.95	335.9461	287.0135	D21	2
6/20/00	11:06:52 AM	12.18	11.44	303.2	20.38	304.7143	258.3991	D21	3

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#22 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	19.0	0.01745						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	11:12:22 AM	12.07	11.44	286.8	21.15	340.5864	281.8322	D22	1	
6/20/00	11:16:50 AM	12.27	11.44	476.8	21.86	427.2736	370.5172	D22	2	
6/20/00	11:18:40 AM	12.83	11.44	615.2	22.11	320.9272	294.9404	D22	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#23 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	21.0	0.01753						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	11:22:42 AM	12.54	11.44	629.6	22.72	420.8407	352.4005	D23	1	
6/20/00	11:25:02 AM	11.98	11.44	393.8	23.06	549.3480	445.7784	D23	2	
6/20/00	11:27:14 AM	11.83	11.44	212.3	23.37	413.0832	335.1508	D23	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#24 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	21.0	0.01753						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	11:39:39 AM	12.08	11.44	199.7	25.57	236.0578	212.3569	D24	1	
6/20/00	11:42:12 AM	12.43	11.44	448.3	25.91	336.8921	316.6121	D24	2	
6/20/00	11:45:11 AM	13.46	11.44	691.2	26.21	244.4934	251.2308	D24	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#25 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	22.0	0.01757						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	11:50:05 AM	13.21	11.44	686.4	26.83	280.4229	276.4425	D25	1	
6/20/00	11:53:09 AM	12.21	11.44	394.4	27.10	386.0712	355.2993	D25	2	
6/20/00	11:55:58 AM	11.97	11.44	202.2	27.29	290.6387	263.9343	D25	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#26 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	22.0	0.01757						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	12:00:19 PM	11.995	11.435	184.6	27.67	251.1204	231.5128	D26	1	
6/20/00	12:02:24 PM	12.295	11.435	400.3	27.84	350.3987	332.8752	D26	2	
6/20/00	12:04:26 PM	12.995	11.435	573.2	28.07	269.0450	272.0014	D26	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#27 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	22.0	0.01757						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	12:09:20 PM	13.155	11.435	572	28.65	242.4206	252.7079	D27	1	
6/20/00	12:11:42 PM	12.395	11.435	419.8	28.9	329.7657	325.9011	D27	2	
6/20/00	12:14:30 PM	12.035	11.435	185.1	29.1	236.2838	228.2314	D27	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#28 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	23.0	0.01761						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	12:18:26 PM	12.025	11.435	176.1	29.43	228.9504	214.0087	D28	1	
6/20/00	12:20:38 PM	12.395	11.435	424.9	29.62	334.5568	324.1155	D28	2	
6/20/00	12:22:56 PM	13.195	11.435	591.2	29.82	245.9905	255.0652	D28	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#29 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	23.0	0.01761						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	12:29:10 PM	13.045	11.435	590.4	30.45	270.7190	282.8246	D29	1	
6/20/00	12:30:54 PM	12.245	11.435	404.6	30.52	381.0392	374.6961	D29	2	
6/20/00	12:34:04 PM	11.935	11.435	184.8	30.72	285.7815	275.6091	D29	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#30 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	23.0	0.01761						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	12:39:26 PM	11.865	11.435	172.2	31.02	310.8743	300.6734	D30	1	
6/20/00	12:41:43 PM	12.175	11.435	424.4	31.14	439.6603	437.7357	D30	2	
6/20/00	12:44:35 PM	13.165	11.435	695.6	31.32	296.2611	320.3301	D30	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#31 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	23.0	0.01761						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	1:46:39 PM	13.456	11.426	642.4	34.37	232.6006	279.5738	D31	1	
6/20/00	1:49:16 PM	12.286	11.426	388.0	34.46	347.7234	382.8844	D31	2	
6/20/00	1:52:11 PM	11.946	11.426	180.9	34.51	271.9826	291.6645	D31	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d 32	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	25.5	0.01771						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/12/00	10:30:38 AM	14.459	11.489	699.2	30.54	164.4241	161.7368	D32	1	
7/12/00	10:32:07 AM	12.899	11.489	448.6	30.71	236.3241	208.6221	D32	2	
7/12/00	10:33:53 AM	12.399	11.489	205.2	30.89	171.0449	145.9558	D32	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#33 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	1:57:18 PM	11.796	11.426	172.9	34.58	367.7328	374.7418	D33	1	
6/20/00	1:59:21 PM	12.126	11.426	434.6	34.65	481.9886	505.6656	D33	2	
6/20/00	2:01:39 PM	13.156	11.426	710.8	34.69	305.9233	348.2499	D33	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d 34	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	25.5	0.01771						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/12/00	10:37:47 AM	12.009	11.489	189.1	31.26	280.6858	234.5382	D34	1	
7/12/00	10:39:40 AM	12.339	11.489	456.1	31.44	408.7660	352.6766	D34	2	
7/12/00	10:40:55 AM	13.329	11.489	716.0	31.55	284.9010	266.1864	D34	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#35 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	2:06:06 PM	12.816	11.416	707.2	34.71	381.1528	423.3609	D35	1	
6/20/00	2:08:45 PM	11.926	11.416	412.6	34.68	633.1211	654.4456	D35	2	
6/20/00	2:11:38 PM	11.746	11.416	240.4	34.63	574.3310	584.0710	D35	3	
6/20/00	2:13:42 PM	12.776	11.416	698.4	34.63	388.0064	428.7653	D35	4	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#36 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	2:18:02 PM	12.966	11.416	700.4	34.65	338.8392	380.1308	D36	1	
6/20/00	2:20:40 PM	12.016	11.416	417.5	34.66	542.4650	564.6288	D36	2	
6/20/00	2:23:24 PM	11.796	11.416	230.1	34.69	476.4799	487.3469	D36	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#37 hole	4"	5/8"	4"	fred molz				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
6/20/00	2:29:29 PM	11.916	11.416	220.2	34.68	344.7918	356.1095	D37	1	
6/20/00	2:34:11 PM	12.246	11.416	444.0	34.68	412.0000	438.3343	D37	2	
6/20/00	2:34:15 PM	13.226	11.416	654.8	34.68	268.5009	307.4259	D37	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bc	Escalante, UT	#38 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/26/00	4:33:26 PM	12.265	11.435	176.3	30.27	161.2209	142.2399	D38	1	
6/26/00	4:36:09 PM	12.805	11.435	427.4	30.24	231.5996	213.0386	D38	2	
6/26/00	4:39:03 PM	14.415	11.435	672.0	30.21	157.1678	162.3953	D38	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#39 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	2:41:04 PM	13.116	11.416	653.2	34.65	286.3988	324.9733	D39	1	
6/20/00	2:45:27 PM	12.146	11.416	421.7	34.68	447.9187	471.4761	D39	2	
6/20/00	2:48:17 PM	11.856	11.416	211.0	34.69	376.3969	386.9165	D39	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#40 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	2:53:02 PM	11.886	11.416	207.4	34.75	346.0138	357.0976	D40	1	
6/20/00	2:56:32 PM	12.266	11.416	459.9	34.77	417.6014	444.8488	D40	2	
6/20/00	2:58:56 PM	13.216	11.416	656.4	34.78	270.8478	310.6738	D40	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#41 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	3:23:10 PM	13.576	11.416	661.2	35.28	224.5345	267.8287	D41	1	
6/20/00	3:28:01 PM	12.446	11.416	477.1	35.37	355.5953	390.1296	D41	2	
6/20/00	3:33:00 PM	11.956	11.416	193.3	35.46	280.5145	296.4460	D41	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#42 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	3:50:11 PM	12.066	11.416	189.1	35.63	227.0608	221.5973	D42	1	
6/20/00	3:51:59 PM	12.596	11.416	440.5	35.66	285.0988	290.5306	D42	2	
6/20/00	3:56:23 PM	13.996	11.416	666.0	35.69	186.5314	211.1098	D42	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
check effect of flow rate	Escalante, UT	#43 hole	4"	5/8"	4"	fred molz				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	6.752	29.0	0.01786						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/20/00	4:00:48 PM	13.766	11.406	666.4	35.63	204.7409	210.3573	D43	1	
6/20/00	4:02:22 PM	12.386	11.406	413.5	35.62	323.2258	299.1384	D43	2	
6/20/00	4:04:48 PM	11.946	11.406	170.6	35.62	246.4666	220.0930	D43	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D44 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:57:36 PM	13.811	11.421	623.6	37.71	190.0999	209.8058	D44	1	
7/7/00	2:59:23 PM	12.591	11.421	437.6	37.71	286.0408	288.1105	D44	2	
7/7/00	3:03:14 PM	12.061	11.421	184.4	37.71	225.2143	217.4027	D44	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D45 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:49:31 PM	12.061	11.421	167.3	37.82	204.4018	197.8176	D45	1	
7/7/00	2:51:10 PM	12.591	11.421	427.1	37.79	279.2493	281.7940	D45	2	
7/7/00	2:52:58 PM	14.041	11.421	654.0	37.79	180.3030	202.6460	D45	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D46 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:33:37 PM	12.861	11.421	661.2	37.77	347.4085	357.8383	D46	1	
7/7/00	2:38:31 PM	12.041	11.421	447.5	37.82	564.8483	545.7574	D46	2	
7/7/00	2:43:44 PM	11.791	11.421	237.9	37.87	508.5583	481.8428	D46	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D47 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:27:13 PM	12.471	11.421	223.6	37.77	163.6933	163.5526	D47	1	
7/7/00	2:28:35 PM	13.121	11.421	448.7	37.77	197.6294	207.6301	D47	2	
7/7/00	2:30:43 PM	15.461	11.421	739.6	37.79	125.3857	155.0057	D47	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D48 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:19:10 PM	16.121	11.421	733.2	37.68	104.2974	134.0328	D48	1	
7/7/00	2:22:24 PM	13.401	11.421	433.6	37.71	162.1298	173.6842	D48	2	
7/7/00	2:24:36 PM	12.611	11.421	198.3	37.74	127.3587	128.5632	D48	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D49 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	2:07:55 PM	12.351	11.421	139.4	37.43	115.6622	113.5574	D49	1	
7/7/00	2:09:51 PM	12.631	11.421	197.8	37.46	124.7237	125.2779	D49	2	
7/7/00	2:11:40 PM	13.661	11.421	488	37.53	159.5618	173.4802	D49	3	
7/7/00	2:13:25 PM	16.211	11.421	729.6	37.59	101.4805	130.8574	D49	4	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	D50 revisited	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/7/00	1:53:22 PM	12.341	11.431	200.1	36.83	169.4862	163.7839	D50	1	
7/7/00	1:56:16 PM	13.021	11.431	455.2	36.92	214.7183	219.2684	D50	2	
7/7/00	1:58:58 PM	15.191	11.431	735.6	37.05	135.0543	161.1265	D50	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#51 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	23.5	0.01763						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	12:06:37 PM	12.56	11.45	185.4	30.71	125.7191	117.0121	D51	1	
6/27/00	12:08:18 PM	13.33	11.45	482.5	30.94	187.4297	186.2753	D51	2	
6/27/00	12:11:55 PM	14.98	11.45	678.0	31.42	131.8739	149.1566	D51	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#52 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	23.5	0.01763						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	12:25:25 PM	15.39	11.45	664.4	32.88	114.5904	138.6398	D52	1	
6/27/00	12:27:56 PM	13.47	11.45	461.4	33.12	167.0816	178.3211	D52	2	
6/27/00	12:30:55 PM	12.65	11.45	193.8	33.43	122.1986	123.5802	D52	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#53 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	1:35:00 PM	12.875	11.455	215.9	31.72	113.8379	109.0984	D53	1	
6/27/00	1:38:10 PM	13.705	11.455	478.2	31.63	153.9304	156.5346	D53	2	
6/27/00	1:40:52 PM	15.885	11.455	695.2	31.60	104.7389	123.1679	D53	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#54 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	1:45:05 PM	15.425	11.455	645.2	31.63	110.3043	126.0999	D54	1	
6/27/00	1:47:48 PM	13.545	11.455	444.9	31.63	155.1433	155.9445	D54	2	
6/27/00	1:49:45 PM	12.735	11.455	184.2	31.63	108.3259	102.4372	D54	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#55 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	1:54:58 PM	12.335	11.455	175.9	31.71	152.9862	140.4882	D55	1	
6/27/00	1:58:47 PM	12.925	11.455	453.1	31.89	230.4447	222.7633	D55	2	
6/27/00	2:01:16 PM	14.735	11.455	732	32.03	155.5940	171.9192	D55	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d56	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.5	0.01792						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	11:13:02 AM	12.409	11.499	209.7	34.42	175.8783	140.5989	D56	1	
7/13/00	11:14:21 AM	12.909	11.499	437.4	34.48	232.0335	193.2002	D56	2	
7/13/00	11:15:44 AM	14.669	11.499	709.2	34.59	156.2981	148.1530	D56	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d57	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.5	0.01792						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	11:18:54 AM	14.549	11.499	708.8	34.78	163.1991	154.1816	D57	1	
7/13/00	11:21:02 AM	12.899	11.499	459.3	34.90	245.8258	206.7359	D57	2	
7/13/00	11:23:00 AM	12.389	11.499	224.6	34.96	193.1056	156.2672	D57	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d58	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.5	0.01792						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	11:25:51 AM	12.459	11.499	212.5	35.05	168.9425	137.7935	D58	1	
7/13/00	11:27:25 AM	13.019	11.499	453.1	35.08	222.4156	189.6370	D58	2	
7/13/00	11:28:20 AM	14.859	11.499	710.8	35.13	146.5138	143.0816	D58	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d59	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.0	0.0179						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	11:30:56 AM	13.809	11.499	711.6	35.18	223.2190	205.0870	D59	1	
		12.589	11.499	495.0	35.20	345.0000	289.7516	D59	2	
7/13/00	11:34:23 AM	12.119	11.499	208.8	35.24	261.2663	211.2089	D59	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#60 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00		14.07	11.45	698.0	32.20	190.0000	202.1804	D60	1	
6/27/00	2:06:54 PM	12.71	11.45	465.4	32.37	278.9425	268.8827	D60	2	
6/27/00	2:08:37 PM	12.14	11.45	170.9	32.48	191.5459	176.9764	D60	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#61 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	25.0	0.01769						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	2:14:34 PM	12.56	11.45	186.0	32.77	127.0519	118.1500	D61	1	
6/27/00	2:16:35 PM	13.41	11.45	491.2	32.85	183.7035	182.6566	D61	2	
6/27/00	2:19:25 PM	15.27	11.45	699.2	32.95	125.0354	141.7640	D61	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#62 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	25.0	0.01769						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	2:23:07 PM	15.49	11.45	703.6	33.03	118.0468	136.0432	D62	1	
6/27/00	2:26:40 PM	13.38	11.45	460.1	33.14	175.1202	175.1043	D62	2	
6/27/00	2:35:07 PM	12.44	11.45	160.3	33.77	123.7853	117.1126	D62	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#63 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	25.0	0.01769						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	2:38:54 PM	12.56	11.45	200.4	33.92	137.4119	131.7644	D63	1	
6/27/00	2:41:20 PM	13.26	11.45	451.4	34.05	184.6194	187.4308	D63	2	
6/27/00	2:43:37 PM	15.29	11.45	686.8	34.15	122.5674	143.6501	D63	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#64 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	25.0	0.01769						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	2:45:43 PM	15.20	11.45	705.2	34.25	129.3411	151.0977	D64	1	
6/27/00	2:47:29 PM	13.21	11.45	460.4	34.32	194.2055	197.8106	D64	2	
6/27/00	2:49:48 PM	12.39	11.45	164.9	34.4	134.6624	128.9990	D64	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#D65 retest	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	24.0	0.01765						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/6/00	12:34:29 PM	12.936	11.426	710.4	32.59	350.0221	348.0271	D65	1	
7/6/00	12:36:05 PM	12.056	11.426	445.4	32.75	545.5022	508.1650	D65	2	
7/6/00	12:39:22 PM	11.776	11.426	192.0	33.04	428.6731	393.2432	D65	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#66 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.5	0.01776						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	3:05:52 PM	14.31	11.44	741.6	34.58	183.4740	193.4436	D66	1	
6/27/00	3:07:39 PM	12.64	11.44	444.5	34.63	280.9281	262.3088	D66	2	
6/27/00		12.14	11.44	183.0	34.70	202.0000	181.9435	D66	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#67 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.0	0.0179						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	3:33:35 PM	12.64	11.44	223.1	35.37	140.7739	119.7176	D67	1	
6/27/00	3:34:50 PM	13.42	11.44	484.9	35.37	180.7192	162.1763	D67	2	
6/27/00	3:37:22 PM	15.33	11.44	688.0	35.34	121.0623	124.1404	D67	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	#68 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	30.0	0.0179						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	3:40:03 PM	14.12	11.44	690.8	35.26	184.0322	174.1356	D68	1	
6/27/00	3:42:34 PM	12.71	11.44	459.5	35.23	273.0576	232.6681	D68	2	
6/27/00	3:45:58 PM	12.22	11.44	208.2	35.20	208.2633	168.3058	D68	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#69 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	26.0	0.01774						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/27/00	3:49:19 PM	12.14	11.44	203.1	35.18	224.5731	208.4227	D69	1	
6/27/00	3:50:43 PM	12.66	11.44	486.9	35.18	302.3812	292.5195	D69	2	
6/27/00	3:52:32 PM	14.23	11.44	752.8	35.14	192.1527	208.4580	D69	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#70 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	26.0	0.01774							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/27/00	3:57:04 PM	15.11	11.44	678.8	35.14	127.4366	146.7033	D70	1		
6/27/00	3:58:34 PM	13.22	11.44	457.0	35.15	190.1784	191.8767	D70	2		
6/27/00	4:01:05 PM	12.49	11.44	190.0	35.22	138.0717	131.9276	D70	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#71 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	26.0	0.01774							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/27/00	4:04:38 PM	12.415	11.435	223.8	35.28	174.7850	166.3349	D71	1		
6/27/00	4:07:25 PM	12.985	11.435	465.0	35.34	224.4083	223.5870	D71	2		
6/27/00	4:09:51 PM	14.865	11.435	730.8	35.40	148.2370	169.0750	D71	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#72 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	26.0	0.01774							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/27/00	4:12:52 PM	14.925	11.435	730.0	35.55	145.2702	166.9815	D72	1		
6/27/00	4:14:50 PM	12.945	11.435	445.3	35.60	221.1344	221.0836	D72	2		
6/27/00	4:17:06 PM	12.345	11.435	195.8	35.66	165.3580	157.9772	D72	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#73 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.0	0.01744							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	9:25:55 AM	12.135	11.475	203.1	19.70	228.2848	166.2459	D73	1		
6/28/00	9:27:09 AM	12.675	11.475	477.8	19.84	289.0255	221.2139	D73	2		
6/28/00	9:29:02 AM	13.635	11.475	727.2	20.08	235.3901	195.8607	D73	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#74 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.0	0.01744							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	9:33:34 AM	14.195	11.475	725.6	20.66	182.8755	162.6085	D74	1		
6/28/00	9:35:36 AM	12.845	11.475	445.8	20.92	235.4486	191.8345	D74	2		
6/28/00	9:37:17 AM	12.265	11.475	190.6	21.09	178.8637	140.2601	D74	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#75 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.0	0.01744							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	9:39:54 AM	12.275	11.475	186.8	21.4	173.2173	137.7950	D75	1		
6/28/00	9:42:09 AM	12.985	11.475	493.6	21.65	235.7776	200.4549	D75	2		
6/28/00	9:43:29 AM	14.195	11.475	710.4	21.82	179.7518	168.1409	D75	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#76 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.0	0.01744							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	9:45:45 AM	14.045	11.475	710.4	22.06	191.4986	179.0571	D76	1		
6/28/00	9:47:01 AM	12.845	11.475	483.7	22.18	256.5606	220.6798	D76	2		
6/28/00	9:48:31 AM	12.235	11.475	189.7	22.34	186.0699	153.5269	D76	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#77 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	23.0	0.01761							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	11:51:32 AM	12.06	11.47	175.2	28.69	227.2230	194.3353	D77	1		
6/28/00	11:54:37 AM	12.57	11.47	482.3	28.81	328.6428	293.9560	D77	2		
6/28/00	11:56:14 AM	13.61	11.47	691.2	28.9	232.3003	225.4406	D77	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#78 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	23.0	0.01761							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	11:58:20 AM	14.91	11.47	696	29.02	138.5176	147.6946	D78	1		
6/28/00	12:01:02 PM	13.07	11.47	427.7	29.22	196.6198	185.1459	D78	2		
6/28/00	12:03:13 PM	12.49	11.47	184.4	29.34	136.1896	123.0581	D78	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#79 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	23.0	0.01761							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	12:05:41 PM	12.22	11.47	185.5	29.51	188.5135	167.5605	D79	1		
6/28/00	12:07:03 PM	12.70	11.47	461.3	29.62	280.3673	259.7791	D79	2		
6/28/00	12:08:35 PM	14.21	11.47	750.8	29.77	193.0974	200.8932	D79	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#80 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	23.0	0.01761							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	12:10:58 PM	14.71	11.47	757.6	29.99	161.8052	175.3590	D80	1		
6/28/00	12:12:54 PM	12.79	11.47	422.0	30.17	238.5641	226.3118	D80	2		
6/28/00	12:14:39 PM	12.34	11.47	200.2	30.33	174.9950	160.9855	D80	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#81 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	25.5	0.01771							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	12:17:17 PM	12.12	11.47	187.3	30.51	220.6627	182.3484	D81	1		
6/28/00	12:19:46 PM	12.52	11.47	450.3	30.71	323.2463	277.4771	D81	2		
6/28/00	12:21:08 PM	13.64	11.47	678.0	30.77	225.2212	210.8267	D81	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#82 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	25.5	0.01771							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	12:23:40 PM	13.64	11.47	675.6	30.88	224.5052	210.8315	D82	1		
6/28/00	12:24:48 PM	12.55	11.47	456.1	30.89	318.1131	275.1601	D82	2		
6/28/00	12:26:38 PM	12.10	11.47	179.6	30.91	218.7781	182.6212	D82	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#83 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	25.0	0.01769							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	12:28:54 PM	12.31	11.47	185.9	30.91	168.6381	145.6516	D83	1		
6/28/00	12:29:58 PM	12.89	11.47	467.5	30.88	244.9949	221.2668	D83	2		
6/28/00	12:31:21 PM	14.22	11.47	675.6	30.85	173.4963	172.5510	D83	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#84 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	20.5	0.01751							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	1:31:34 PM	15.06	11.48	690.0	28.41	131.3725	154.2680	D84	1		
6/28/00	1:33:07 PM	13.23	11.48	439.1	28.30	183.4080	188.7615	D84	2		
6/28/00	1:34:50 PM	12.64	11.48	200.8	28.21	129.5349	127.0554	D84	3		
Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#85 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	20.5	0.01751							
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading		
6/28/00	1:36:56 PM	12.17	11.48	189.5	28.12	209.4643	197.3101	D85	1		
6/28/00	1:38:17 PM	12.63	11.48	475.3	28.04	309.2309	301.4176	D85	2		
6/28/00	1:39:47 PM	13.74	11.48	698.4	27.93	221.1208	233.4656	D85	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#86 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.5	0.01746							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	1:42:49 PM	14.68	11.48	698.4	27.75	151.0683	176.8876	D86	1		
6/28/00	1:44:12 PM	12.98	11.48	432.7	27.70	213.2786	220.6914	D86	2		
6/28/00	1:45:26 PM	12.46	11.48	196.2	27.69	151.1661	150.1694	D86	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#87 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.5	0.01746							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	1:47:47 PM	12.50	11.48	189.4	27.66	139.9744	139.3428	D87	1		
6/28/00	1:50:14 PM	13.12	11.48	456.5	27.64	204.6091	213.5627	D87	2		
6/28/00	1:51:13 PM	14.80	11.48	698.0	27.63	144.8128	170.2654	D87	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#88 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	19.5	0.01746							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	1:53:24 PM	14.49	11.48	694.8	27.63	160.8625	185.2091	D88	1		
6/28/00	1:54:35 PM	12.96	11.48	448.3	27.64	224.0819	231.0685	D88	2		
6/28/00	1:56:49 PM	12.43	11.48	199.8	27.69	159.0074	157.5717	D88	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#89 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	21.0	0.01753							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	2:03:01 PM	12.21	11.47	189.9	28.00	194.9079	179.7753	D89	1		
6/28/00	2:04:21 PM	12.70	11.47	473.8	28.06	286.7995	275.5811	D89	2		
6/28/00	2:05:31 PM	13.90	11.47	690.0	28.13	201.6304	212.3497	D89	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#90 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	21.5	0.01755							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	2:07:43 PM	14.20	11.47	686.8	28.33	176.4056	187.0671	D90	1		
6/28/00	2:09:11 PM	12.85	11.47	468.5	28.47	251.1499	242.3139	D90	2		
6/28/00	2:10:43 PM	12.33	11.47	200.1	28.64	175.9195	163.8055	D90	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement (bottom)	Escalante, UT	#91 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	22.5	0.01759							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	2:12:34 PM	12.26	11.47	187.8	28.92	180.8283	161.4080	D91	1		
6/28/00	2:13:32 PM	12.79	11.47	469.9	29.05	265.1093	247.7553	D91	2		
6/28/00	2:15:39 PM	14.03	11.47	679.6	29.39	188.4614	195.0725	D91	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#92 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	24.0	0.01765							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00	2:18:01 PM	14.38	11.47	677.2	29.74	162.8350	164.5807	D92	1		
6/28/00	2:19:24 PM	12.94	11.47	460.7	29.93	232.1461	212.5640	D92	2		
6/28/00	2:21:06 PM	12.34	11.47	183.9	30.16	160.5711	141.2424	D92	3		

Sample Name	Field	Well	Depth	Diameter	Length	Operator					
permeability measurement	Escalante, UT	#93 hole	4"	5/8"	4"	silong lu					
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity							
(in)	(in)		(C)	(cp)							
0.92	0.92	7.211	24.0	0.01765							
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading		
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)				
6/28/00		14.39	11.47	676	29.7	163.0000	163.5566	D93	1		
		12.94	11.47	462	29.9	232.0000	212.9502	D93	2		
		12.35	11.47	184	30.1	161.0000	139.4898	D93	3		

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (bottom)	Escalante, UT	#94 hole	4"	5/8"	4"	silong lu				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	25.0	0.01769						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
6/28/00	2:30:33 PM	14.79	11.47	654.4	31.55	136.5419	144.0615	D94	1	
6/28/00	2:31:49 PM	13.11	11.47	429.4	31.72	193.6624	182.1974	D94	2	
6/28/00	2:33:23 PM	12.53	11.47	200.0	31.95	142.9766	129.4508	D94	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d95	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.5	0.01811						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:13:57 PM	14.999	11.499	666.4	38.26	132.6939	125.8180	D95	1	
7/13/00	12:15:58 PM	13.249	11.499	481.0	38.60	205.1171	173.3081	D95	2	
7/13/00	12:18:33 PM	12.399	11.499	170.5	38.83	146.4337	116.4544	D95	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d96	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	35.0	0.0181						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:21:54 PM	12.219	11.499	243.2	38.94	262.7056	203.6936	D96	1	
7/13/00	12:23:00 PM	12.619	11.499	457.0	38.94	312.1773	249.9024	D96	2	
7/13/00	12:24:20 PM	13.879	11.499	664.0	38.94	203.0021	178.5996	D96	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d97	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	33.5	0.01805						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:27:24 PM	15.059	11.499	661.6	38.89	129.1956	128.3509	D97	1	
7/13/00	12:29:36 PM	13.099	11.499	427.4	38.80	200.2150	172.8619	D97	2	
7/13/00	12:31:41 PM	12.469	11.499	196.4	38.74	155.6545	127.8038	D97	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d98	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	32.5	0.018						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:34:33 PM	12.429	11.499	196.7	38.63	163.3403	136.6304	D98	1	
7/13/00	12:36:12 PM	13.129	11.499	464.7	38.52	213.9316	188.4713	D98	2	
7/13/00	12:37:39 PM	15.259	11.499	784.0	38.43	144.1440	147.1100	D98	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d99	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	32.5	0.018						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:40:18 PM	14.199	11.499	784.0	38.21	208.7449	197.3600	D99	1	
7/13/00	12:42:02 PM	12.609	11.499	451.7	38.12	311.4668	261.1986	D99	2	
7/13/00	12:44:14 PM	12.119	11.499	186.9	38.04	235.3641	189.4319	D99	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d100	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	32.5	0.018						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:46:14 PM	12.129	11.499	177.8	37.80	220.0887	176.3000	D100	1	
7/13/00	12:47:34 PM	12.669	11.499	467.3	37.81	304.6289	254.8529	D100	2	
7/13/00	12:49:00 PM	14.159	11.499	737.6	37.80	199.3871	186.2139	D100	3	

Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d101	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	32.5	0.018						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:51:35 PM	15.639	11.499	750.0	37.73	123.2172	126.8090	D101	1	
7/13/00	12:53:00 PM	13.289	11.499	452.8	37.58	188.0327	164.0712	D101	2	
7/13/00	12:55:29 PM	12.549	11.499	196.4	37.55	143.2445	117.9950	D101	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d102	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	32.5	0.018						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	12:58:05 PM	12.244	11.494	183.7	37.50	189.8759	152.5210	D102	1	
7/13/00	1:00:55 PM	12.894	11.494	480.0	37.50	258.8160	218.8403	D102	2	
7/13/00	1:03:02 PM	14.674	11.494	745.2	37.58	165.0854	158.9834	D102	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d103	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	33.5	0.01805						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	1:41:36 PM	11.844	11.494	150.0	40.26	339.7260	274.2498	D103	1	
7/13/00	1:43:48 PM	12.314	11.494	495.8	40.54	470.4014	397.0701	D103	2	
7/13/00	1:45:07 PM	13.234	11.494	712.8	40.71	307.2324	279.5350	D103	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d104	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.0	0.01807						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	1:49:00 PM	14.394	11.494	704.8	41.25	174.2241	172.2012	D104	1	
7/13/00	1:50:51 PM	12.724	11.494	429.2	41.39	267.2405	234.4212	D104	2	
7/13/00	1:52:33 PM	12.224	11.494	202.6	41.59	217.0975	183.7817	D104	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d105	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.0	0.01807						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	1:55:00 PM	11.954	11.494	191.8	41.73	329.9994	274.0362	D105	1	
7/13/00	1:56:13 PM	12.394	11.494	468.1	41.85	404.3353	348.8869	D105	2	
7/13/00	1:57:36 PM	13.794	11.494	859.6	42.01	274.8453	264.5808	D105	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d106	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.0	0.01807						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	2:00:11 PM	14.175	11.485	693.6	42.32	186.9639	186.2217	D106	1	
7/13/00	2:01:47 PM	12.665	11.485	446.4	42.52	291.3608	260.6063	D106	2	
7/13/00	2:03:22 PM	12.095	11.485	174.6	42.69	225.8060	193.6262	D106	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement	Escalante, UT	d107	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.5	0.01809						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	2:05:39 PM	12.705	11.485	254.1	42.95	160.9970	143.2018	D107	1	
7/13/00	2:07:28 PM	13.325	11.485	449.2	43.15	184.1815	172.4427	D107	2	
7/13/00	2:08:44 PM	15.615	11.485	752.0	43.29	125.9948	138.4298	D107	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d108	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.5	0.01809						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	2:10:26 PM	14.805	11.485	742.4	43.47	159.5185	166.8434	D108	1	
7/13/00	2:12:04 PM	12.925	11.485	441.3	43.64	235.3018	215.8344	D108	2	
7/13/00	2:13:36 PM	12.305	11.485	202.3	43.78	194.3756	170.2733	D108	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d109	4"	5/8"	4"	robert bridges				
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity						
(in)	(in)		(C)	(cp)						
0.92	0.92	7.211	34.5	0.01809						
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading	
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)			
7/13/00	2:15:31 PM	12.365	11.485	207.1	43.97	185.0609	163.5164	D109	1	
7/13/00	2:17:14 PM	13.065	11.485	472.3	44.11	228.5683	213.8737	D109	2	
7/13/00	2:18:32 PM	14.945	11.485	760.0	44.26	156.2644	167.5519	D109	3	

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Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d110	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	35.0	0.01811					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:22:33 PM	14.585	11.485	759.6	44.62	175.5420	183.9716	D110	1
7/13/00	2:25:46 PM	12.855	11.485	471.5	44.89	263.9055	245.4114	D110	2
7/13/00	2:28:14 PM	12.085	11.485	162.8	45.06	214.8258	188.5445	D110	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d111	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	36.0	0.01815					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:30:58 PM	12.335	11.485	154.8	45.19	143.0856	124.8959	D111	1
7/13/00	2:32:25 PM	13.335	11.485	466.8	45.28	190.4913	179.8925	D111	2
7/13/00	2:33:44 PM	15.485	11.485	736.8	45.36	128.2370	140.5883	D111	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d112	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	36.5	0.01817					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:36:10 PM	14.845	11.485	735.2	45.43	155.7381	162.1745	D112	1
7/13/00	2:37:28 PM	12.965	11.485	460.7	45.48	238.2421	217.2275	D112	2
7/13/00	2:39:21 PM	12.225	11.485	192.4	45.48	205.0567	176.4231	D112	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d113	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	35.5	0.01813					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:41:07 PM	12.225	11.485	182.5	45.54	195.1727	171.9068	D113	1
7/13/00	2:42:24 PM	13.025	11.485	473.0	45.57	235.3371	220.8033	D113	2
7/13/00	2:43:33 PM	14.865	11.485	747.6	45.59	157.9000	168.8722	D113	3

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Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d114	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	35.5	0.01813					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:45:36 PM	14.165	11.485	751.2	45.62	205.4630	209.6317	D114	1
7/13/00	2:47:31 PM	12.595	11.485	446.2	45.65	313.4557	284.9316	D114	2
7/13/00	2:48:44 PM	12.045	11.485	204.9	45.67	291.8439	253.9343	D114	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d115	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	36.0	0.01815					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:50:25 PM	12.285	11.485	194.2	45.73	191.4392	168.1368	D115	1
7/13/00	2:51:58 PM	13.075	11.485	461.0	45.79	221.5059	207.1305	D115	2
7/13/00	2:54:58 PM	14.985	11.485	722.0	45.88	146.5026	157.0188	D115	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d116	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	36.5	0.01817					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	2:56:39 PM	14.965	11.485	718.4	45.91	146.4998	155.1635	D116	1
7/13/00	2:57:51 PM	12.995	11.485	441.2	45.96	223.6939	206.2755	D116	2
7/13/00	2:59:43 PM	12.275	11.485	195.2	46.01	194.7969	169.9512	D116	3
Sample Name	Field	Well	Depth	Diameter	Length	Operator			
permeability measurement (top)	Escalante, UT	d117	4"	5/8"	4"	robert bridges			
Outside Diam.	Inside Diam.	Geom. Fact.	Ref. Temp.	Viscosity					
(in)	(in)		(C)	(cp)					
0.92	0.92	7.211	36.5	0.01817					
Date	Time	Flow Press	Atm. Press	Flow Rate	Temp.	old Perm.	new Perm.	Sample	Reading
		(psia)	(psia)	(cc/min)	(C)	(md)	(md)		
7/13/00	3:00:47 PM	12.15	11.48	193.9	46.04	229.3087	198.2417	D117	1
7/13/00	3:02:02 PM	12.82	11.48	439.6	46.07	252.9622	230.7263	D117	2
7/13/00	3:03:08 PM	14.57	11.48	764.8	46.10	178.3250	184.6658	D117	3

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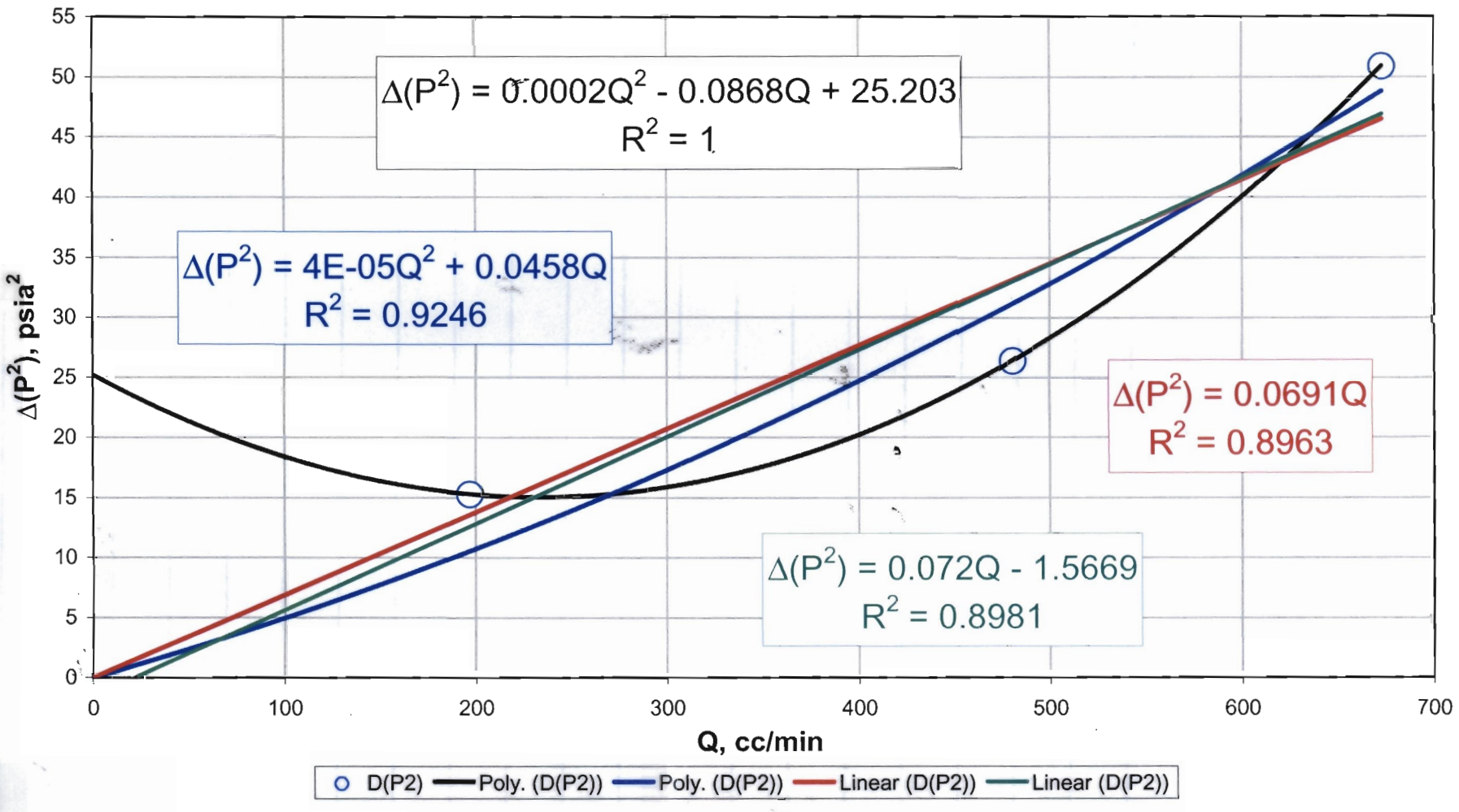
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d118	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:04:13 PM	15.03	11.48	772.4	46.13	154.1131	164.6610	D118	1	
7/13/00	3:05:30 PM	12.95	11.48	441.1	46.18	230.2549	212.5515	D118	2	
7/13/00	3:07:17 PM	12.25	11.48	196.0	46.27	201.0044	175.9330	D118	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d119	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:09:06 PM	12.13	11.48	186.0	46.33	227.1066	197.0929	D119	1	
7/13/00	3:10:10 PM	12.77	11.48	434.2	46.33	260.2736	237.6215	D119	2	
7/13/00	3:11:05 PM	14.54	11.48	711.6	46.38	167.8834	174.4000	D119	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d120	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:13:20 PM	13.51	11.48	707.6	46.44	261.8288	253.2313	D120	1	
7/13/00	3:14:53 PM	12.39	11.48	488.0	46.47	421.3051	374.2952	D120	2	
7/13/00	3:16:50 PM	11.86	11.48	197.0	46.53	416.3899	354.6858	D120	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d121	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:18:38 PM	12.03	11.48	187.8	46.61	272.3597	235.6510	D121	1	
7/13/00	3:19:39 PM	12.65	11.48	450.9	46.61	299.7154	272.4902	D121	2	
7/13/00	3:20:40 PM	14.34	11.48	808.8	46.65	205.8794	212.0137	D121	3	

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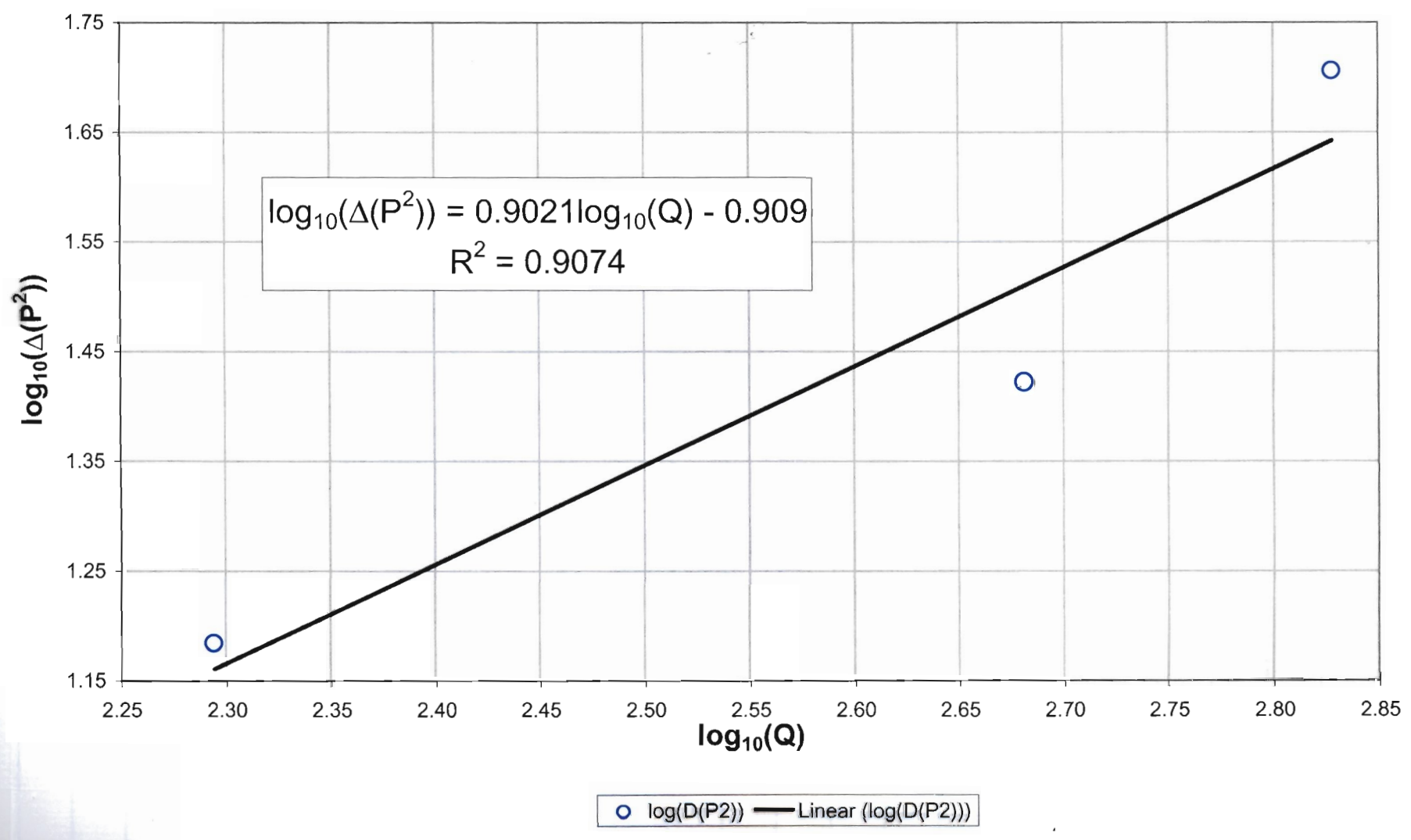
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d122	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:23:02 PM	15.18	11.48	726	46.64	138.4382	150.7819	D122	1	
7/13/00	3:24:18 PM	13.13	11.48	454.7	46.58	210.2130	198.1700	D122	2	
7/13/00	3:25:42 PM	12.36	11.48	213.7	46.48	191.0236	169.3341	D122	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d123	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:27:42 PM	12.49	11.48	203.6	46.41	157.6959	141.0609	D123	1	
7/13/00	3:28:27 PM	13.47	11.48	456.6	46.39	172.5919	166.2832	D123	2	
7/13/00	3:29:48 PM	15.73	11.48	715.6	46.39	116.3540	130.6623	D123	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d124	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:32:27 PM	15.08	11.48	705.6	46.44	138.6997	149.5429	D124	1	
7/13/00	3:33:56 PM	13.19	11.48	473.6	46.47	210.6936	199.1169	D124	2	
7/13/00	3:35:40 PM	12.32	11.48	199.7	46.50	187.3281	165.5883	D124	3	
Sample Name	Field	Well	Depth	Diameter	Length	Operator				
permeability measurement (top)	Escalante, UT	d125	4"	5/8"	4"	robert bridges				
Outside Diam. (in)	Inside Diam. (in)	Geom. Fact.	Ref. Temp. (C)	Viscosity (cp)						
0.92	0.92	7.211	36.5	0.01817						
Date	Time	Flow Press (psia)	Atm. Press (psia)	Flow Rate (cc/min)	Temp. (C)	old Perm. (md)	new Perm. (md)	Sample	Reading	
7/13/00	3:37:55 PM	11.86	11.48	181.7	46.53	384.0510	327.1391	D125	1	
7/13/00	3:38:56 PM	12.41	11.48	465.3	46.58	392.8826	350.3075	D125	2	
7/13/00	3:40:28 PM	13.77	11.48	818.4	46.61	265.8846	262.8609	D125	3	

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Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -10

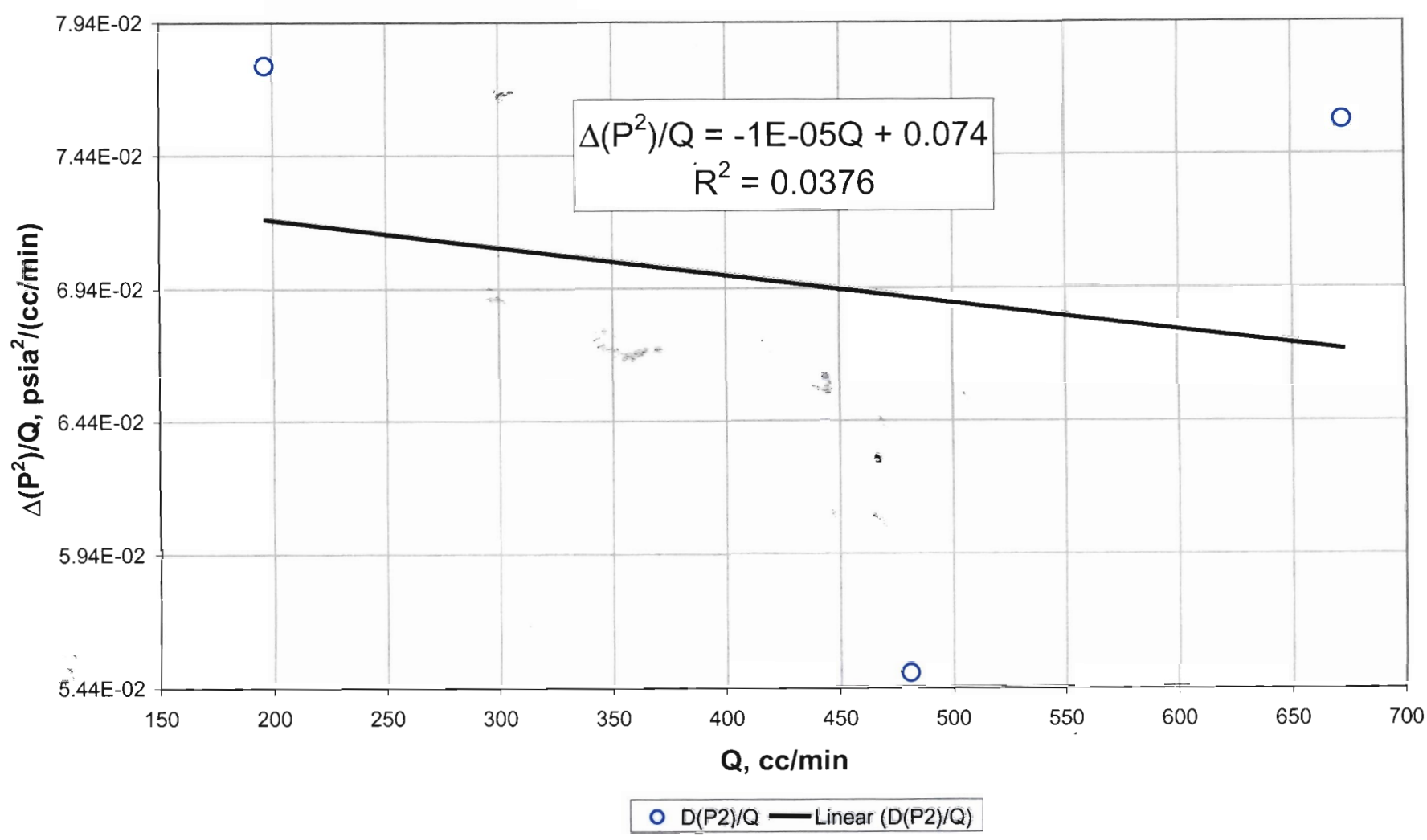


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 D Transect: Drillhole -10



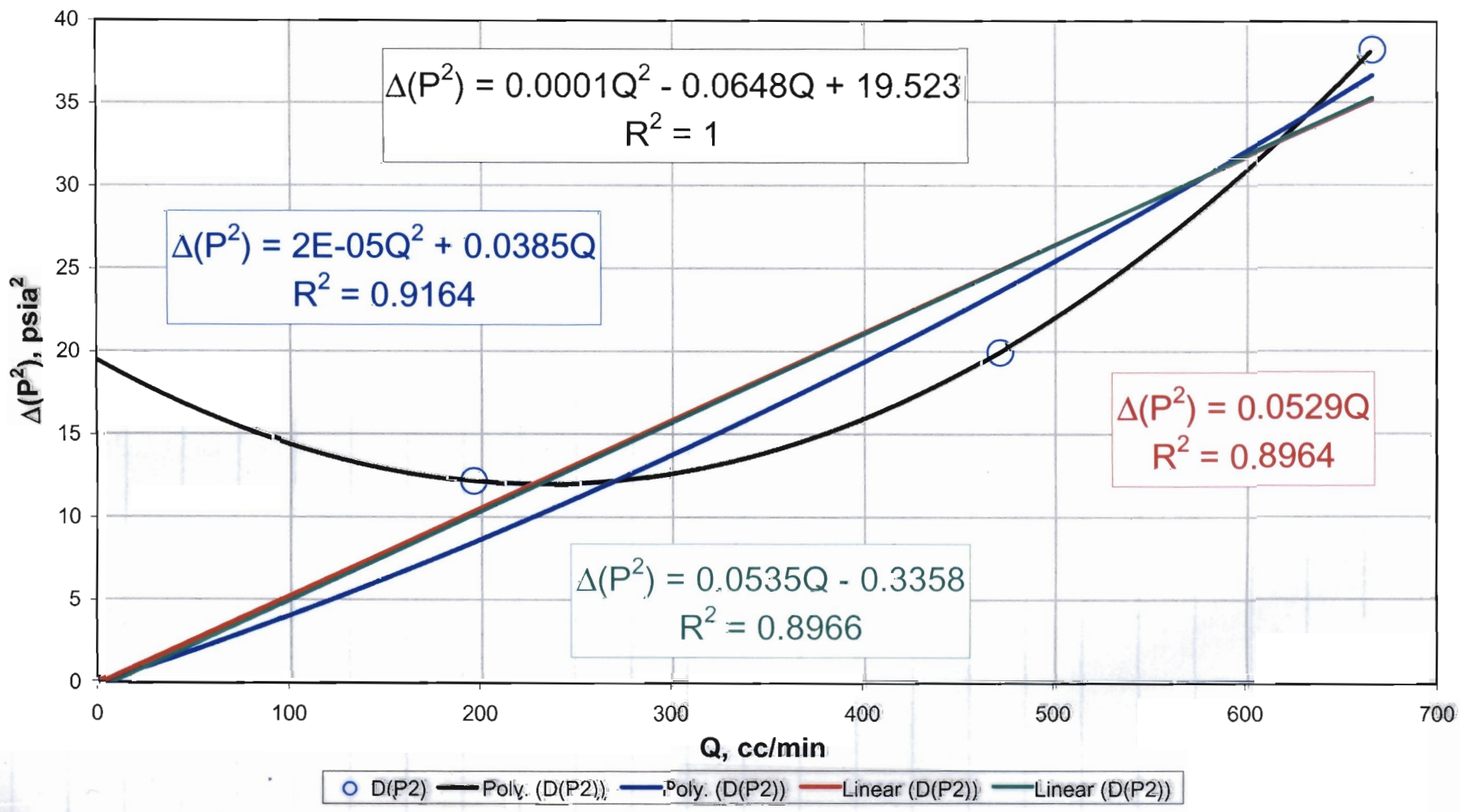
Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 D Transect : Drillhole -10

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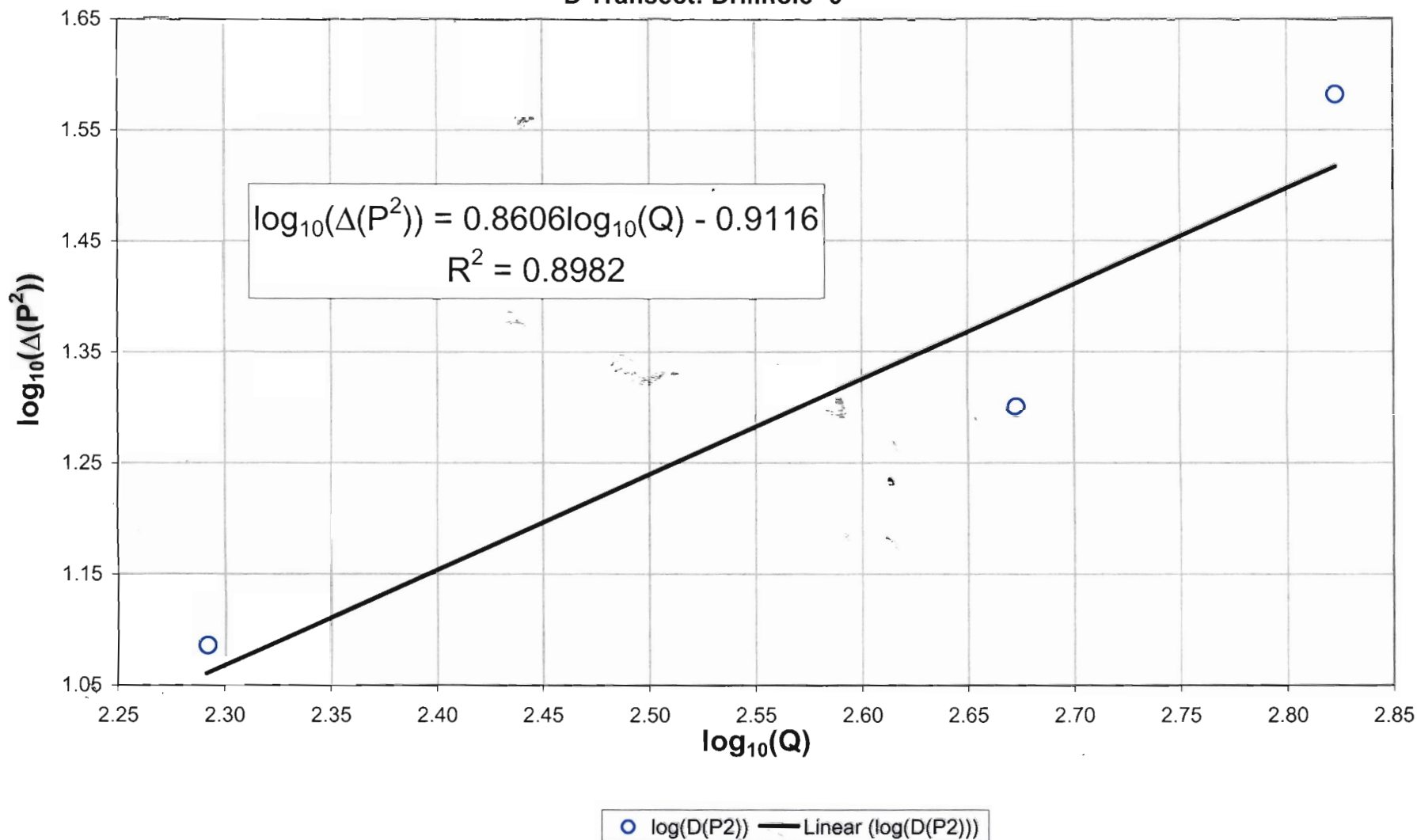
Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -9

RNM, 01/03/03



Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)

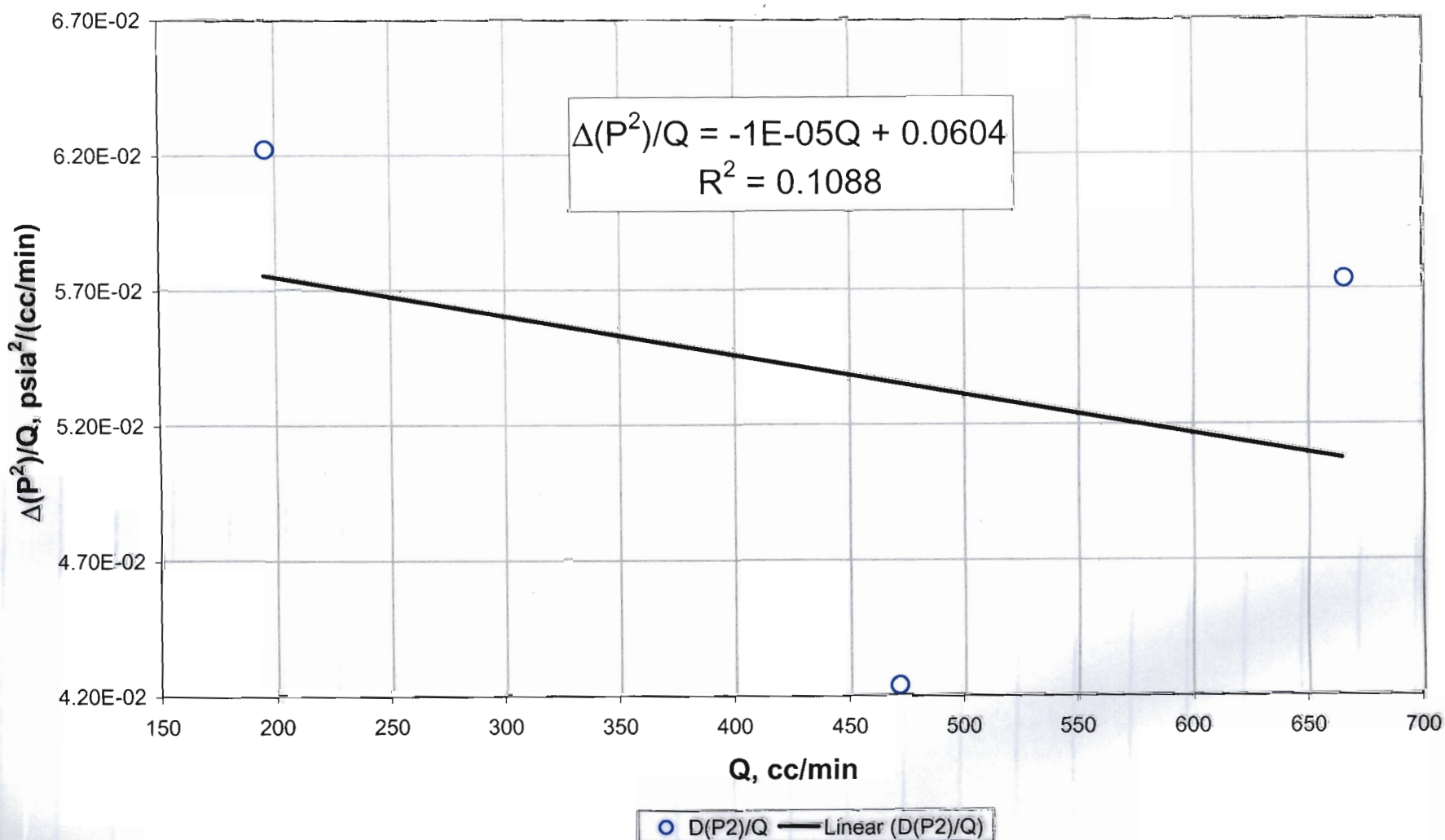
D Transect: Drillhole -9



Final check for high velocity flow effects:

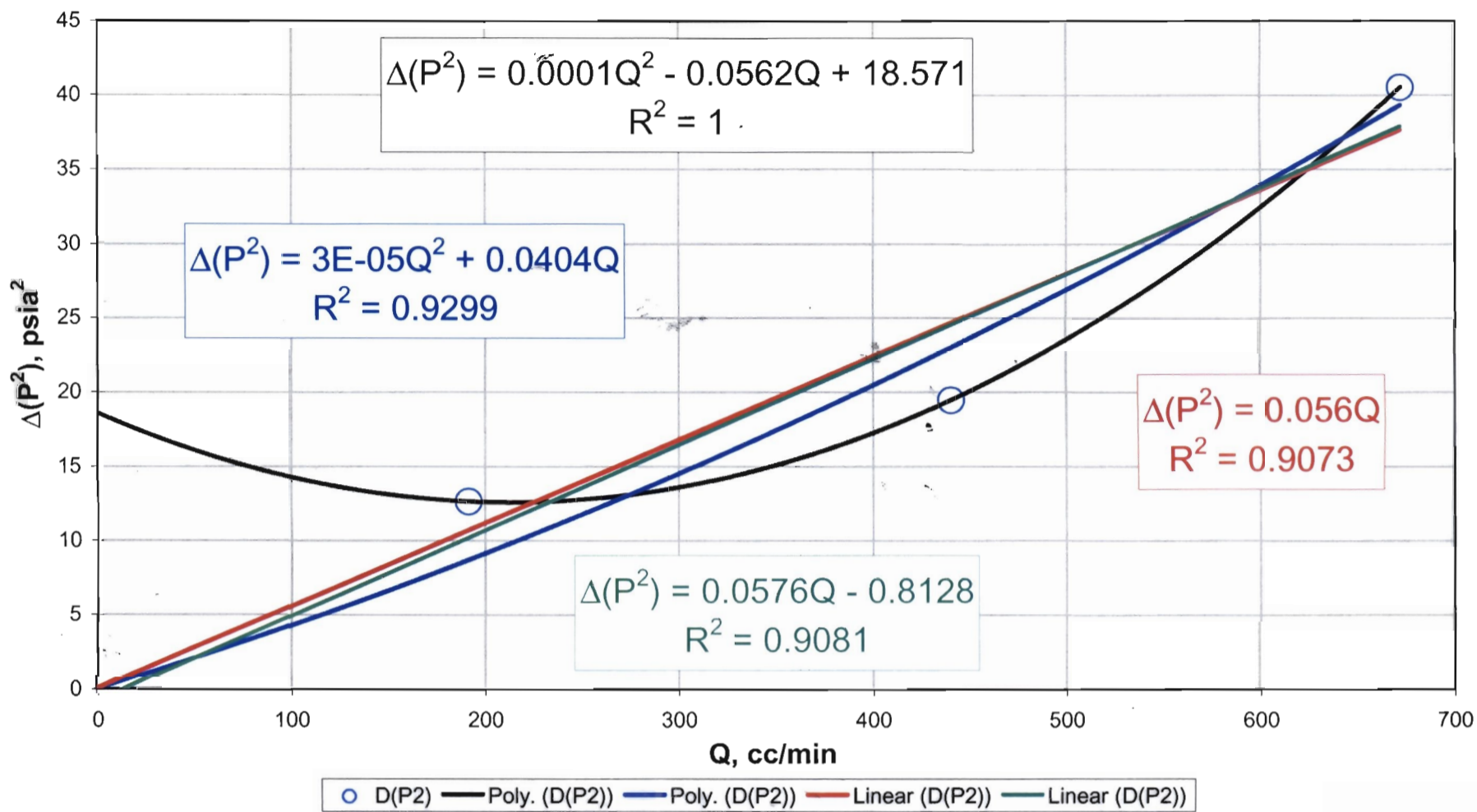
High velocity flow effects are present when the slope is non-zero and positive.

D Transect : Drillhole -9



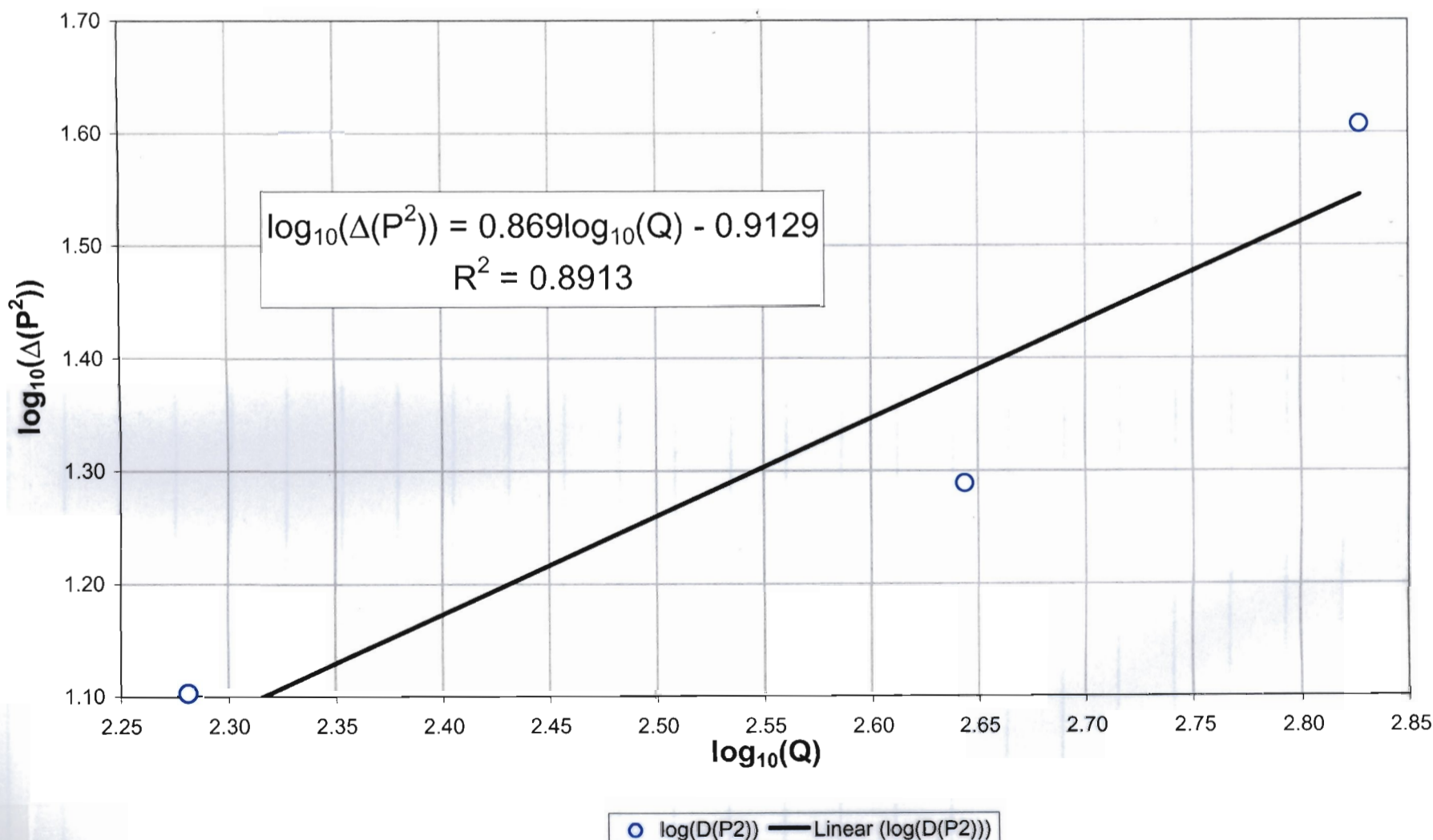
Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -8

Run, 01/03/07

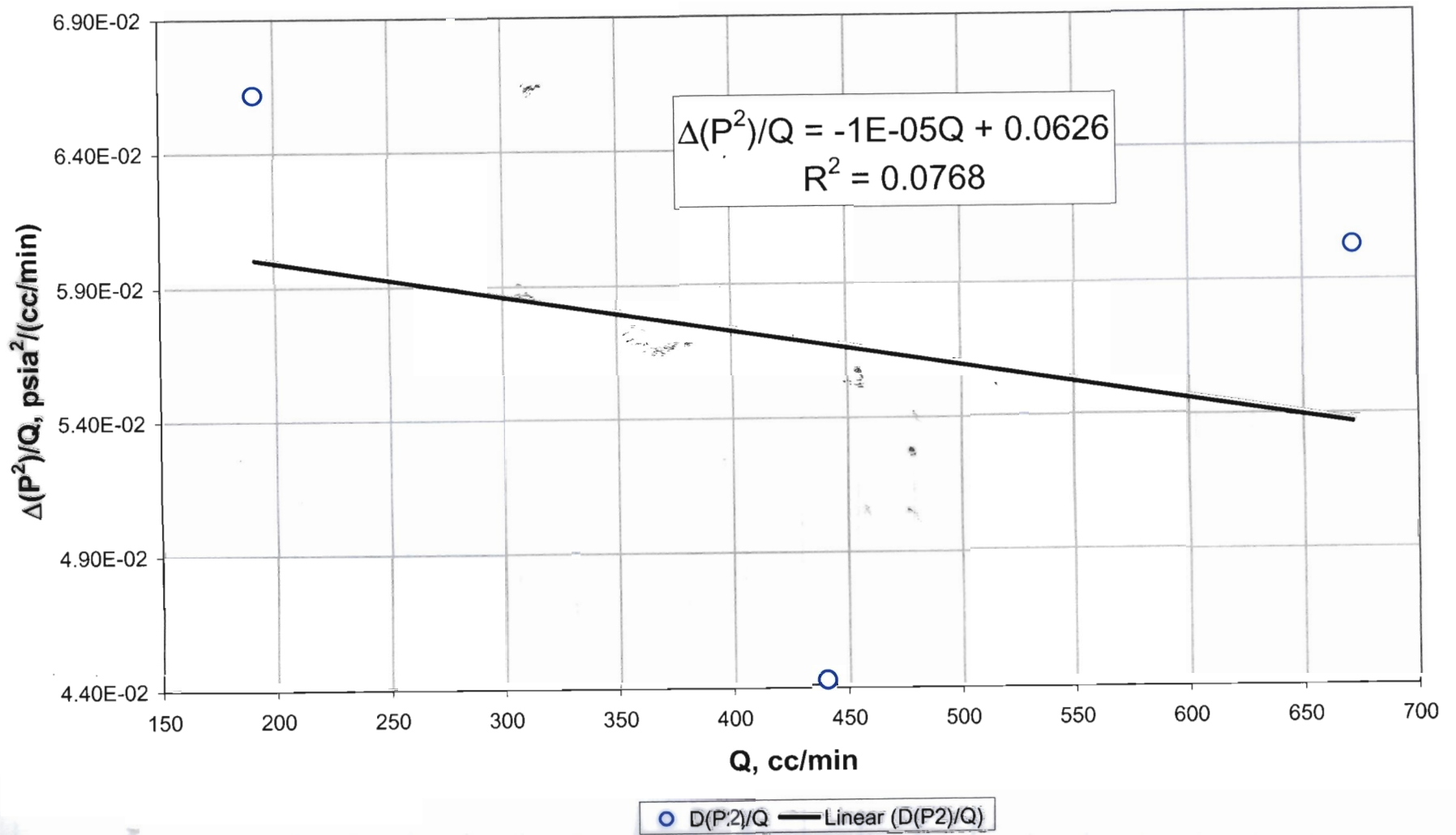


Run, 01/03/07

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 D Transect: Drillhole -8

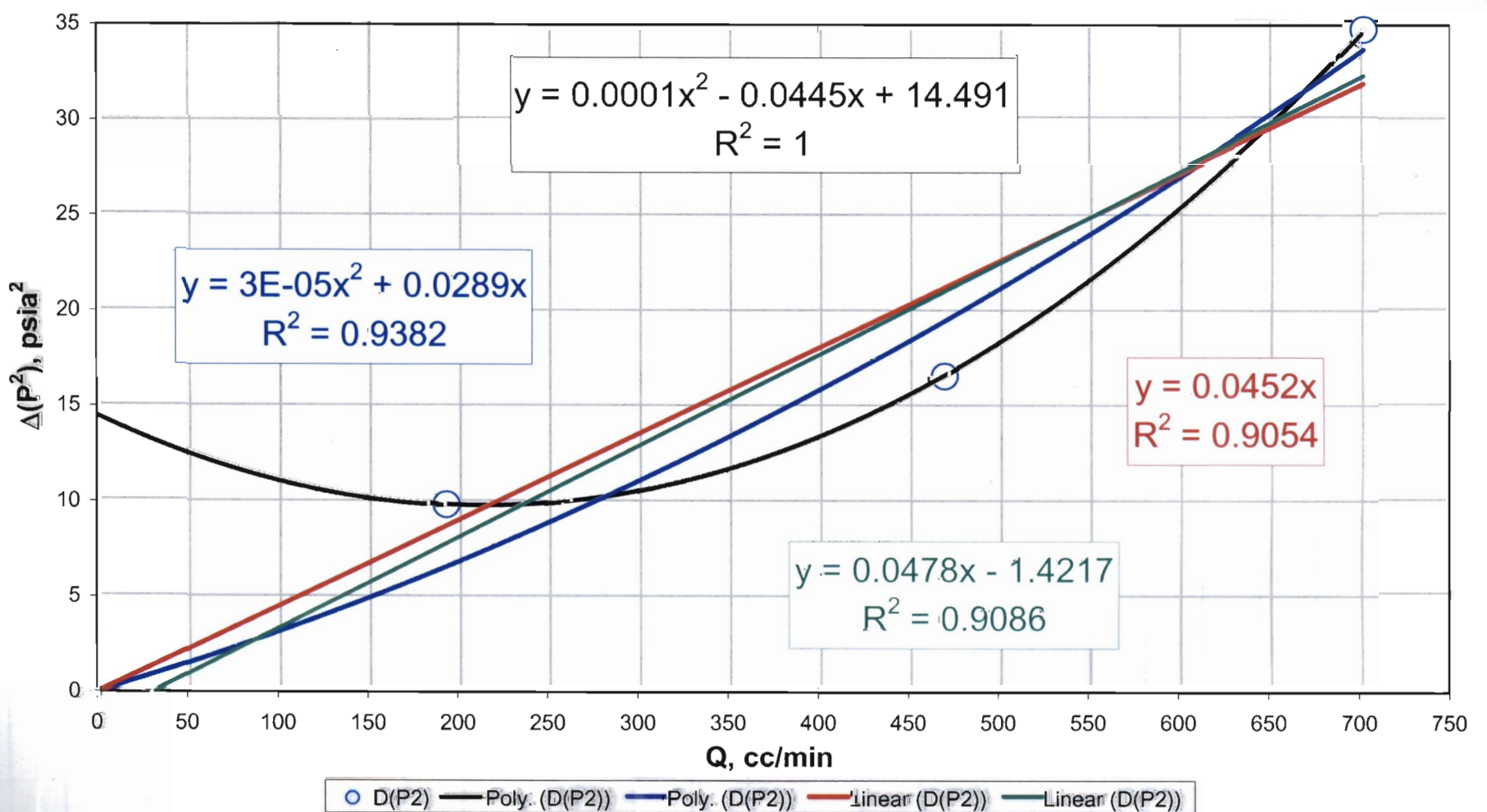


Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 D Transect : Drillhole -8



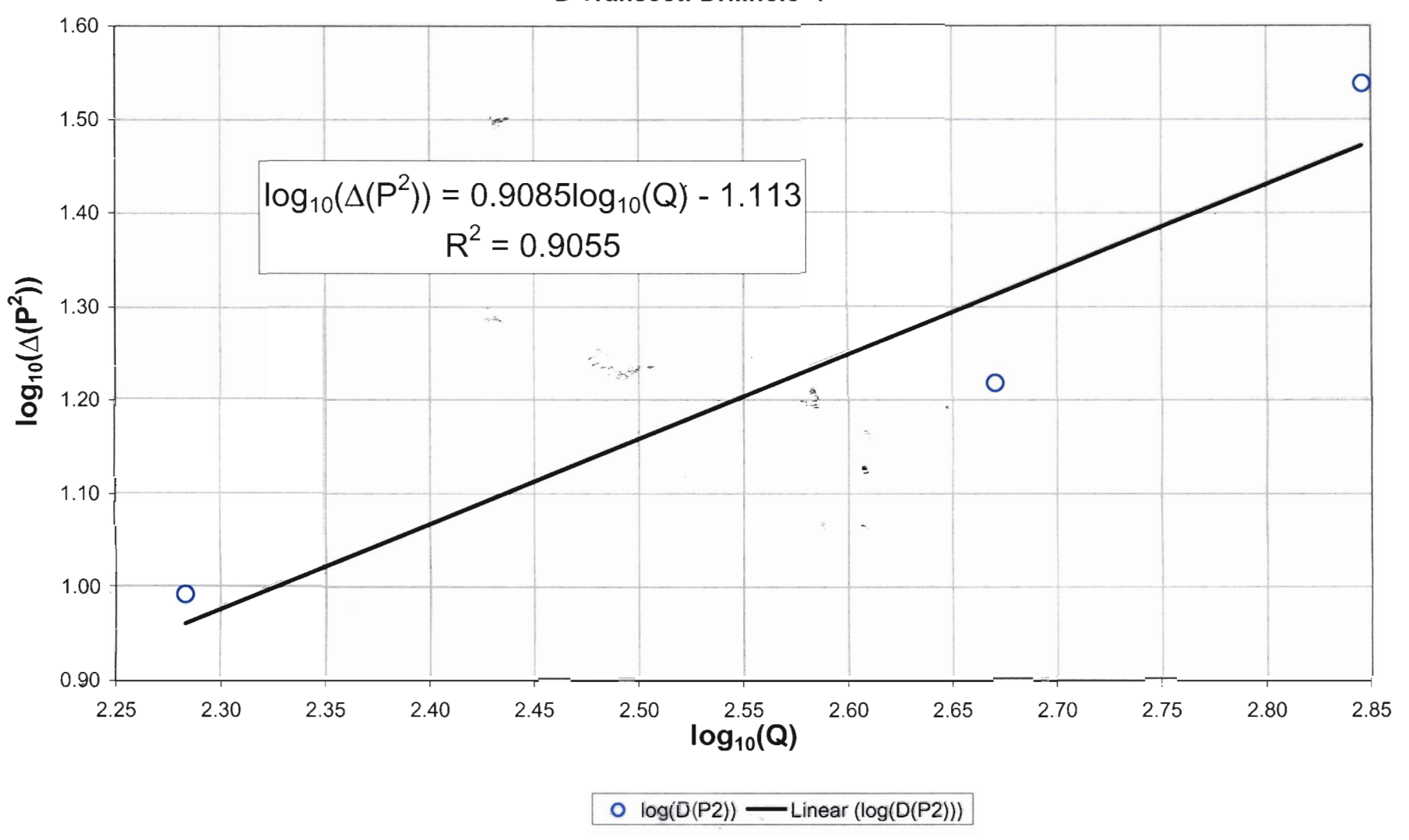
RNM, 01/03/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -7



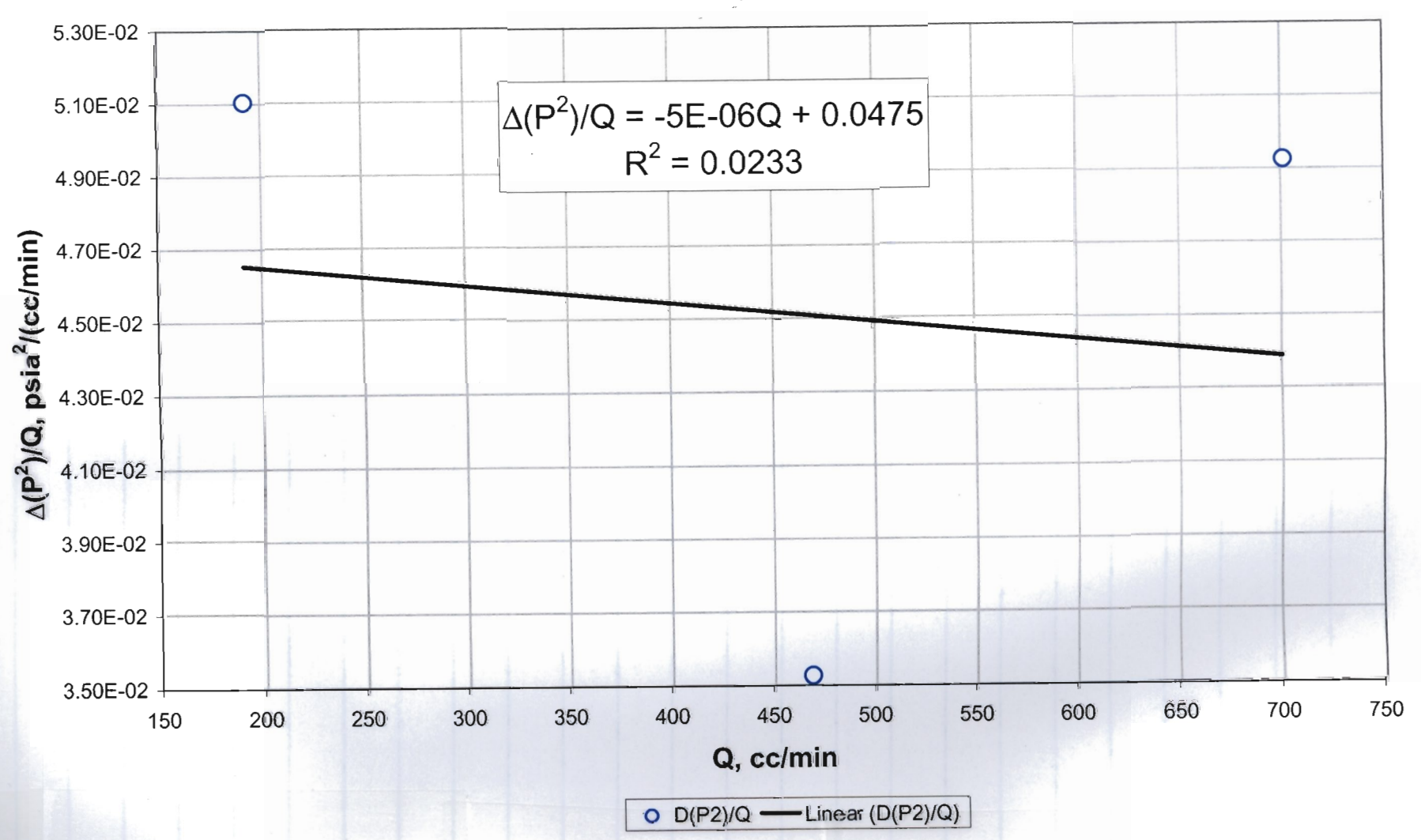
RNM, 01/03/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
D Transect: Drillhole -7



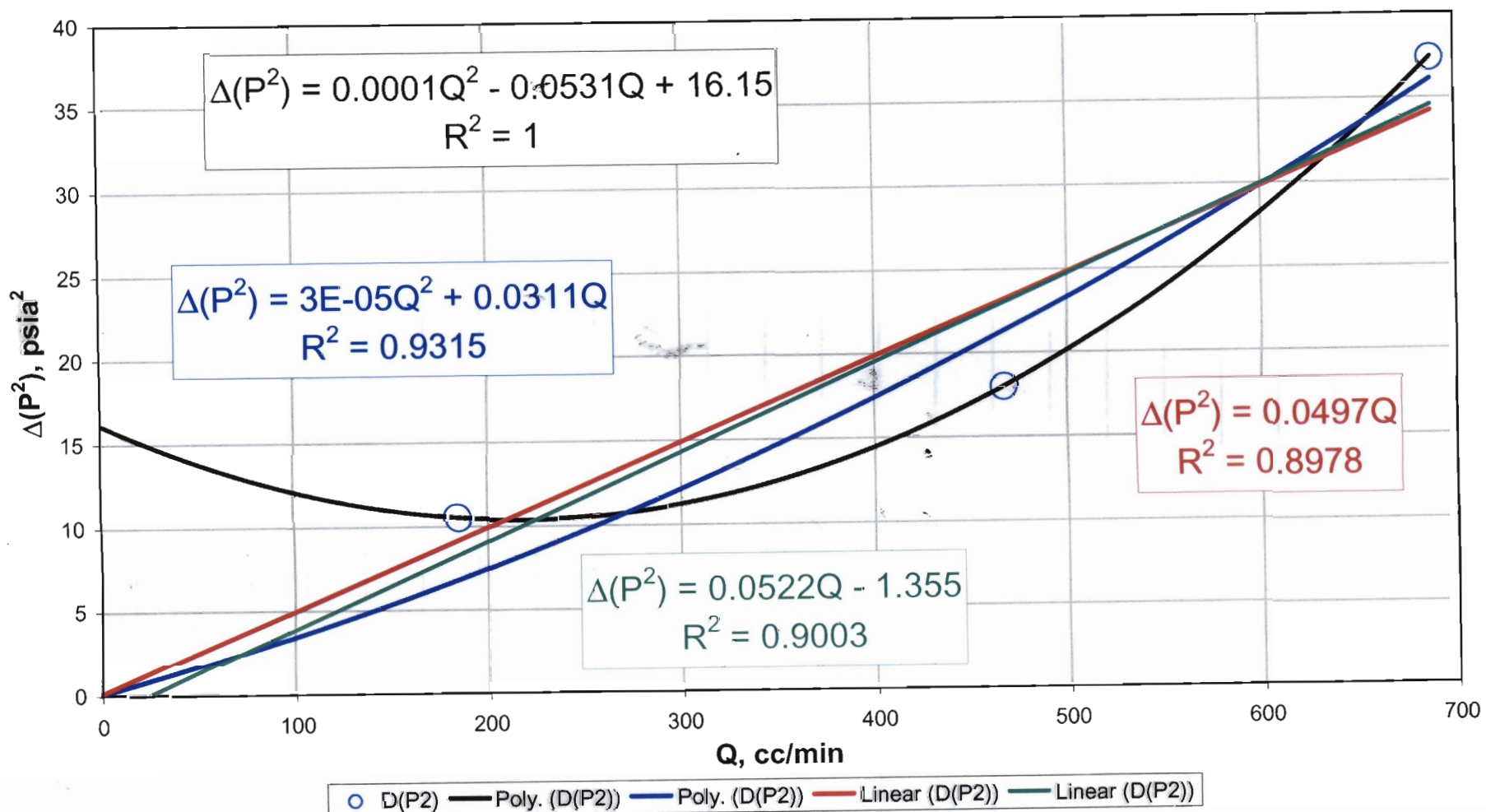
RNM, 01/03/03

Final check for high velocity flow effects:
High velocity flow effects are present when the slope is non-zero and positive.
D Transect : Drillhole -7



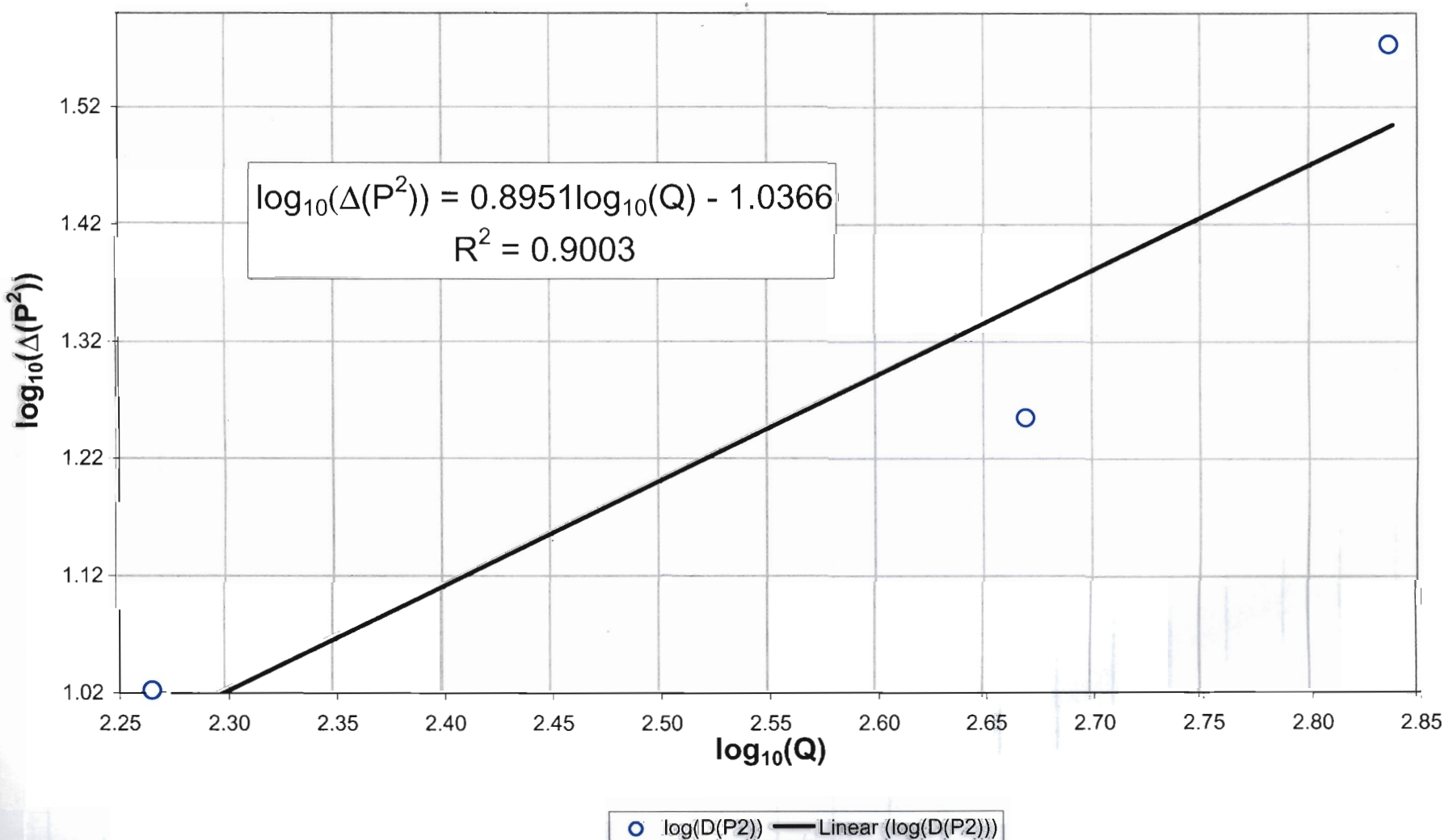
RNM, 01/03/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -6



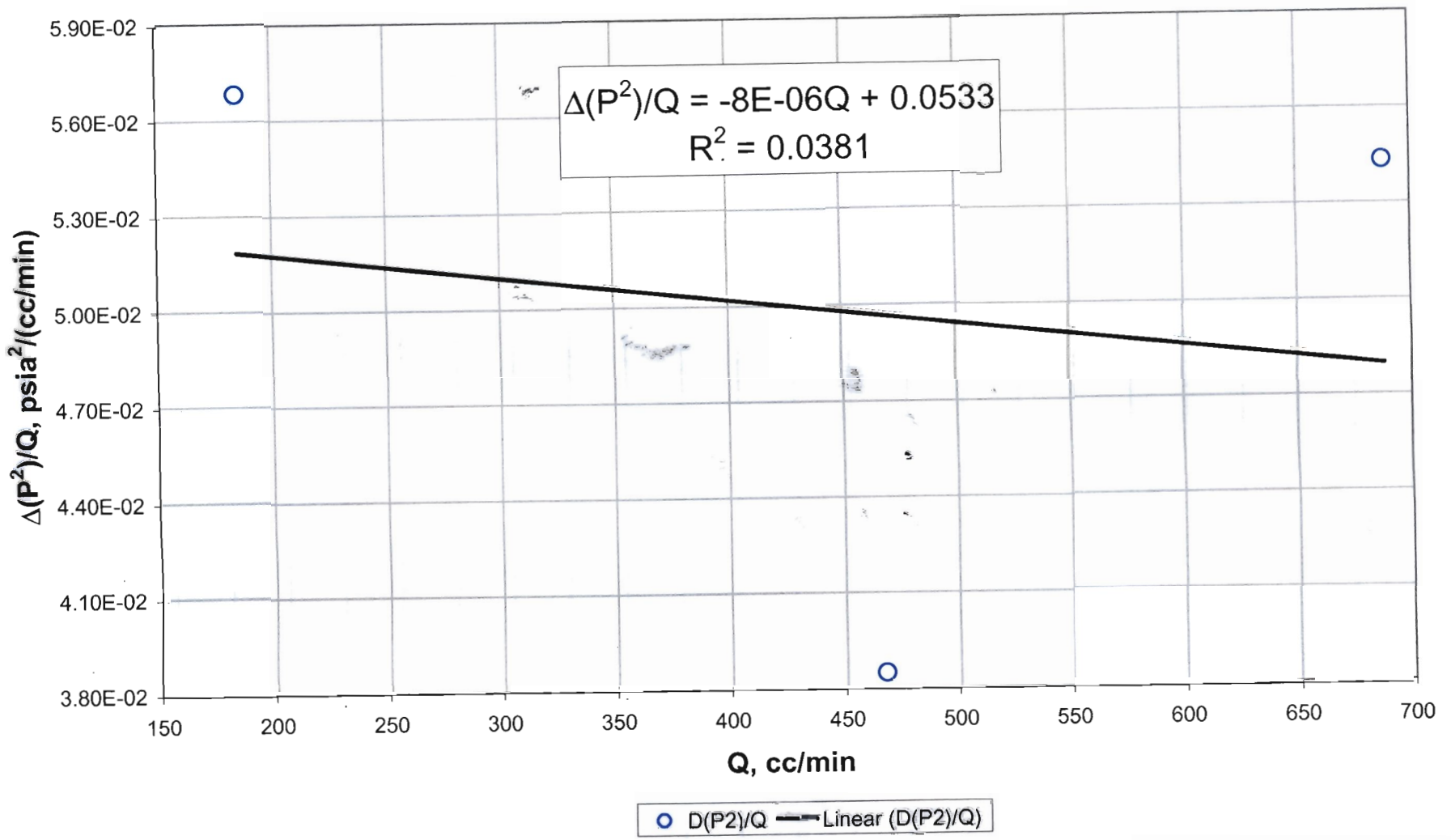
RNM, 01/03/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 D Transect: Drillhole -6



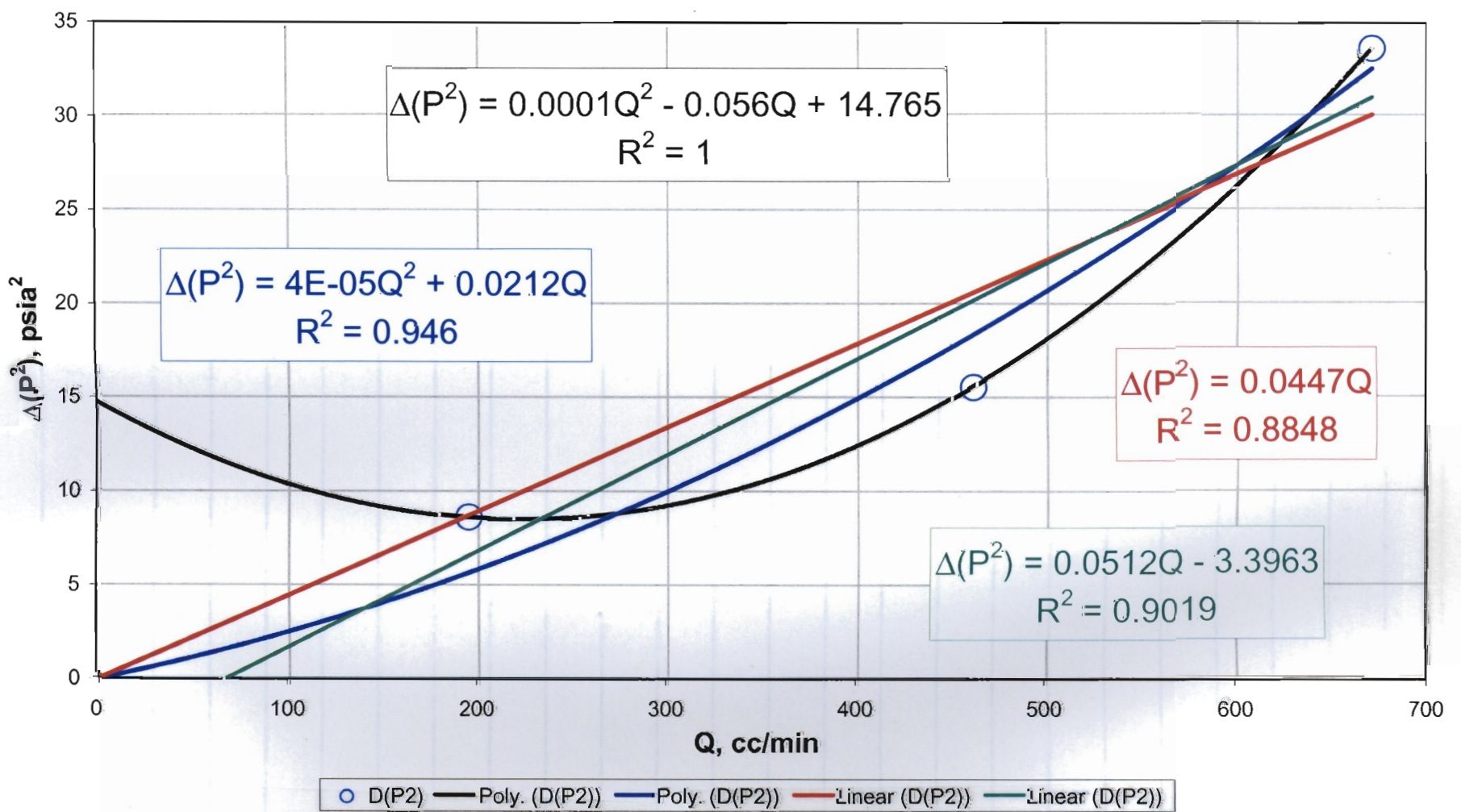
RNM, 01/03/03

Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 D Transect : Drillhole -6



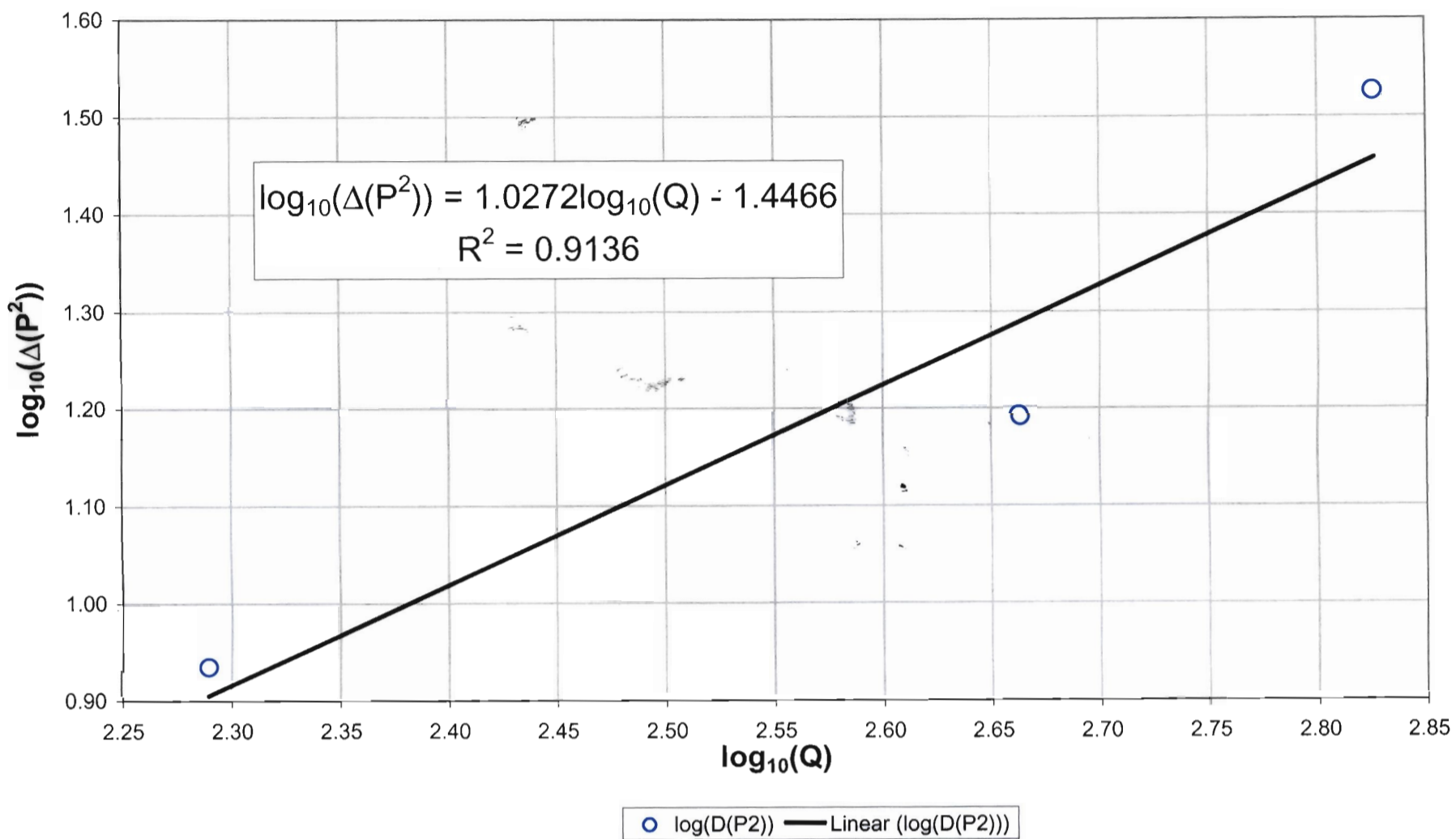
RNM 01/03/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -5



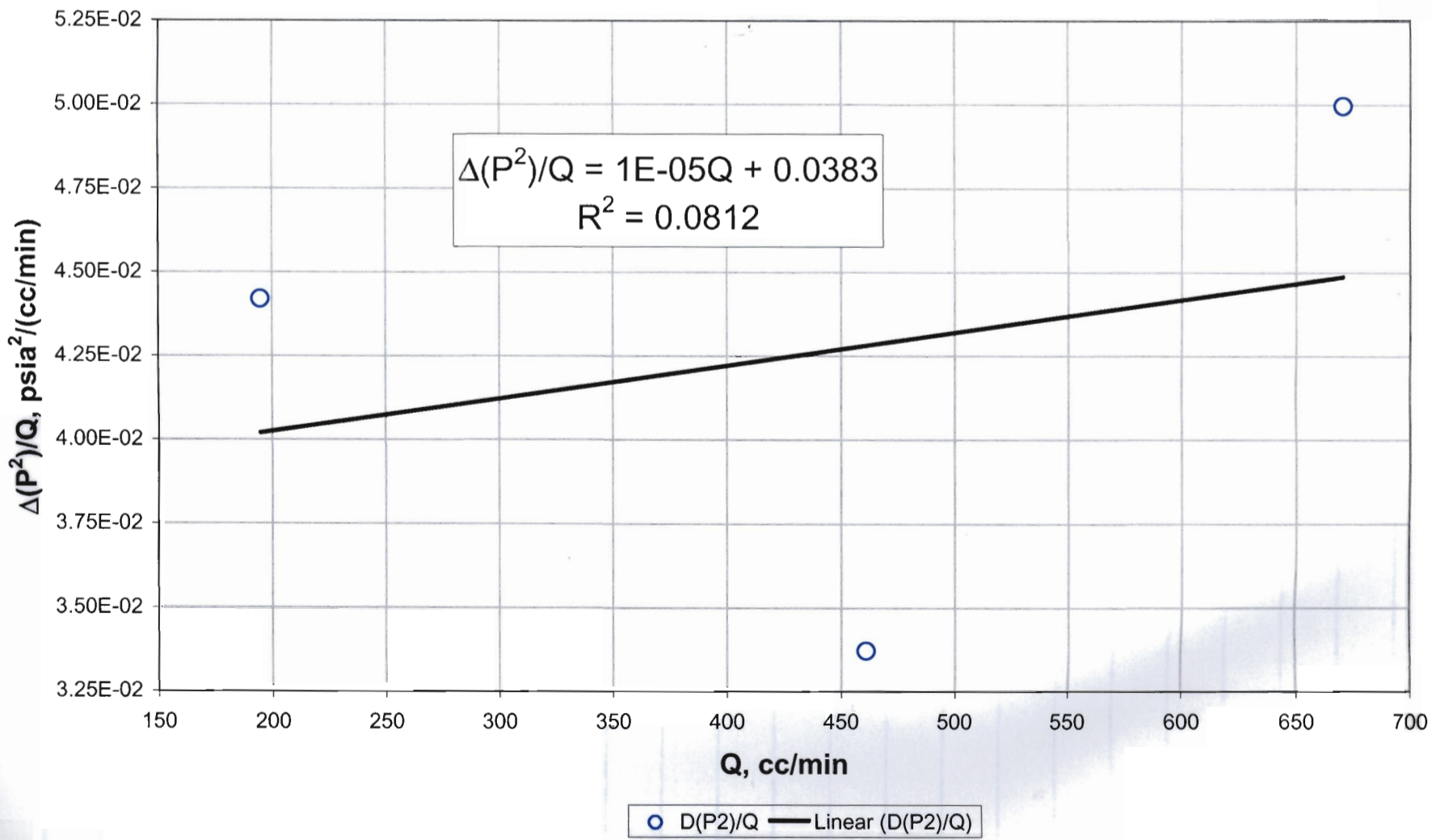
RNM 01/03/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
D Transect: Drillhole -5



RNM, 01/03/03

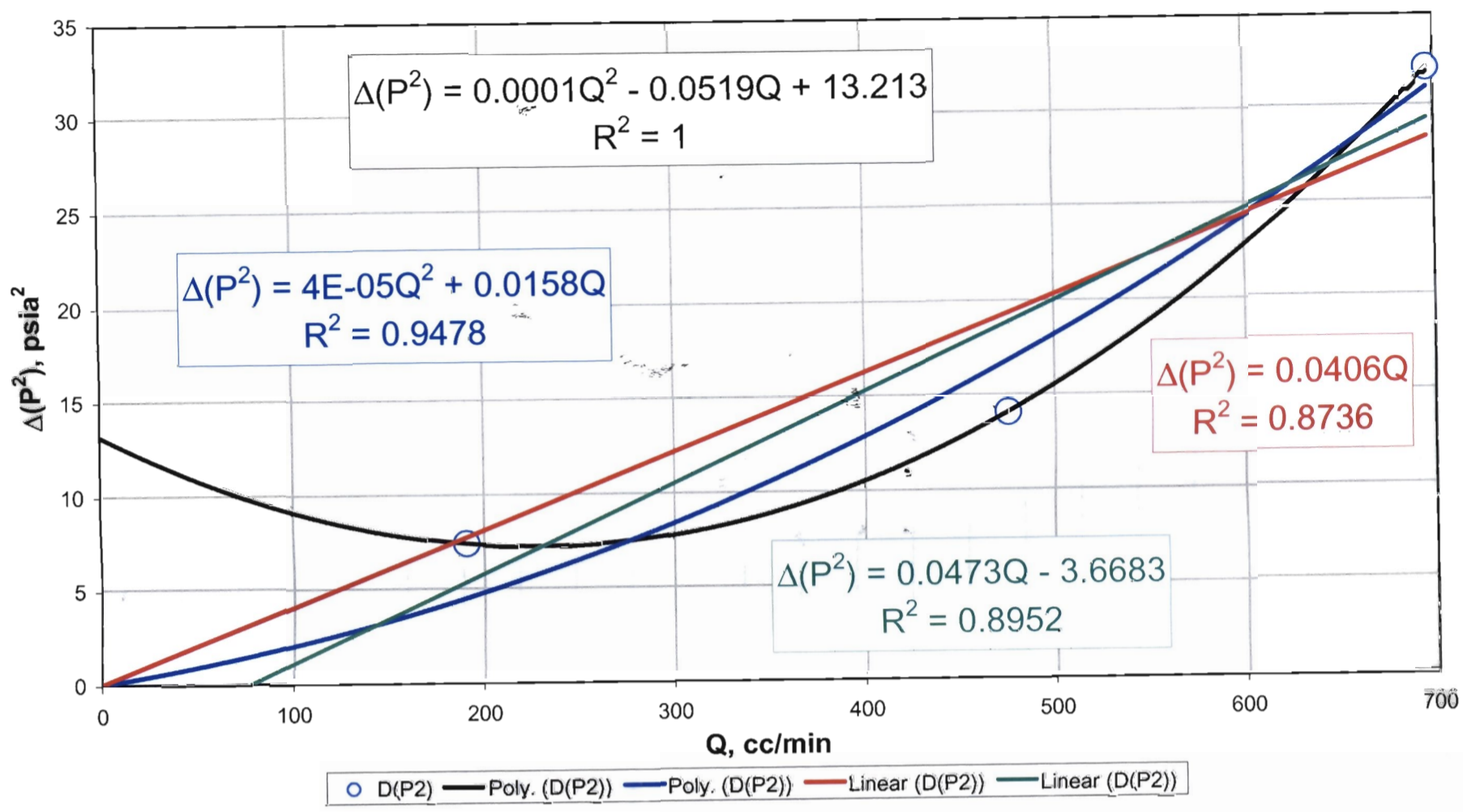
Final check for high velocity flow effects:
High velocity flow effects are present when the slope is non-zero and positive.
D Transect : Drillhole -5



RNM, 01/03/03

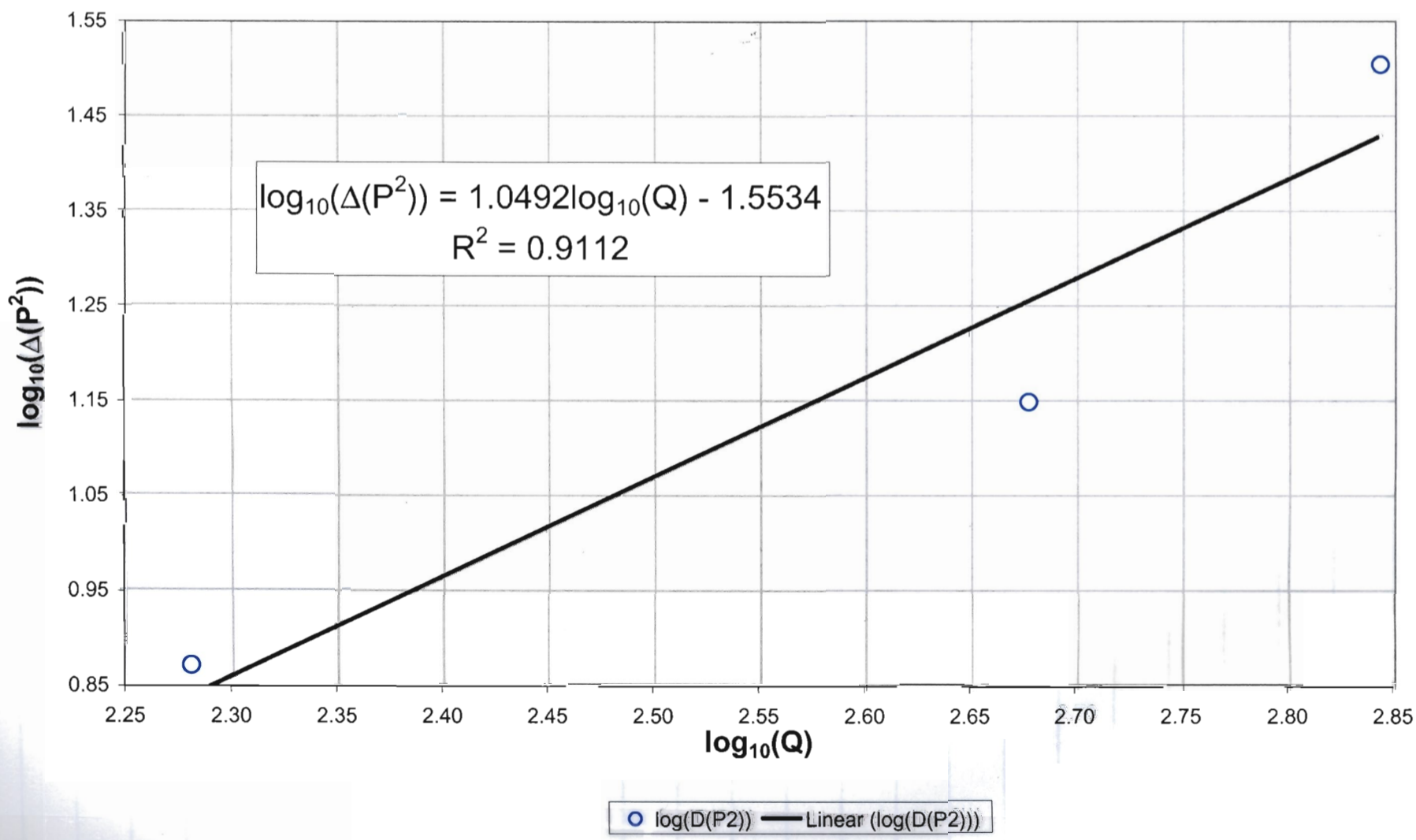
Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -4

RMW, or log/03

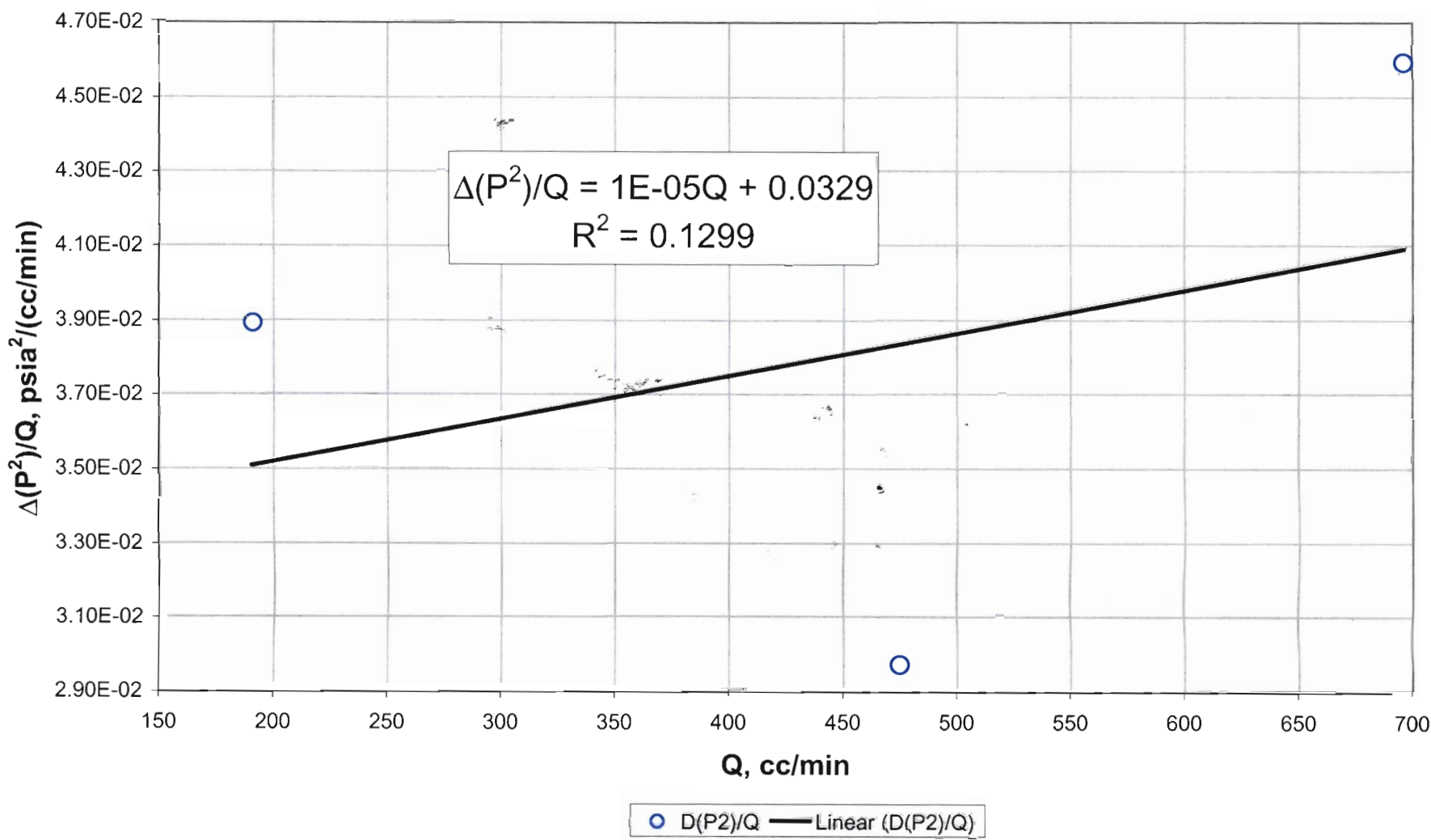


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
 D Transect: Drillhole -4

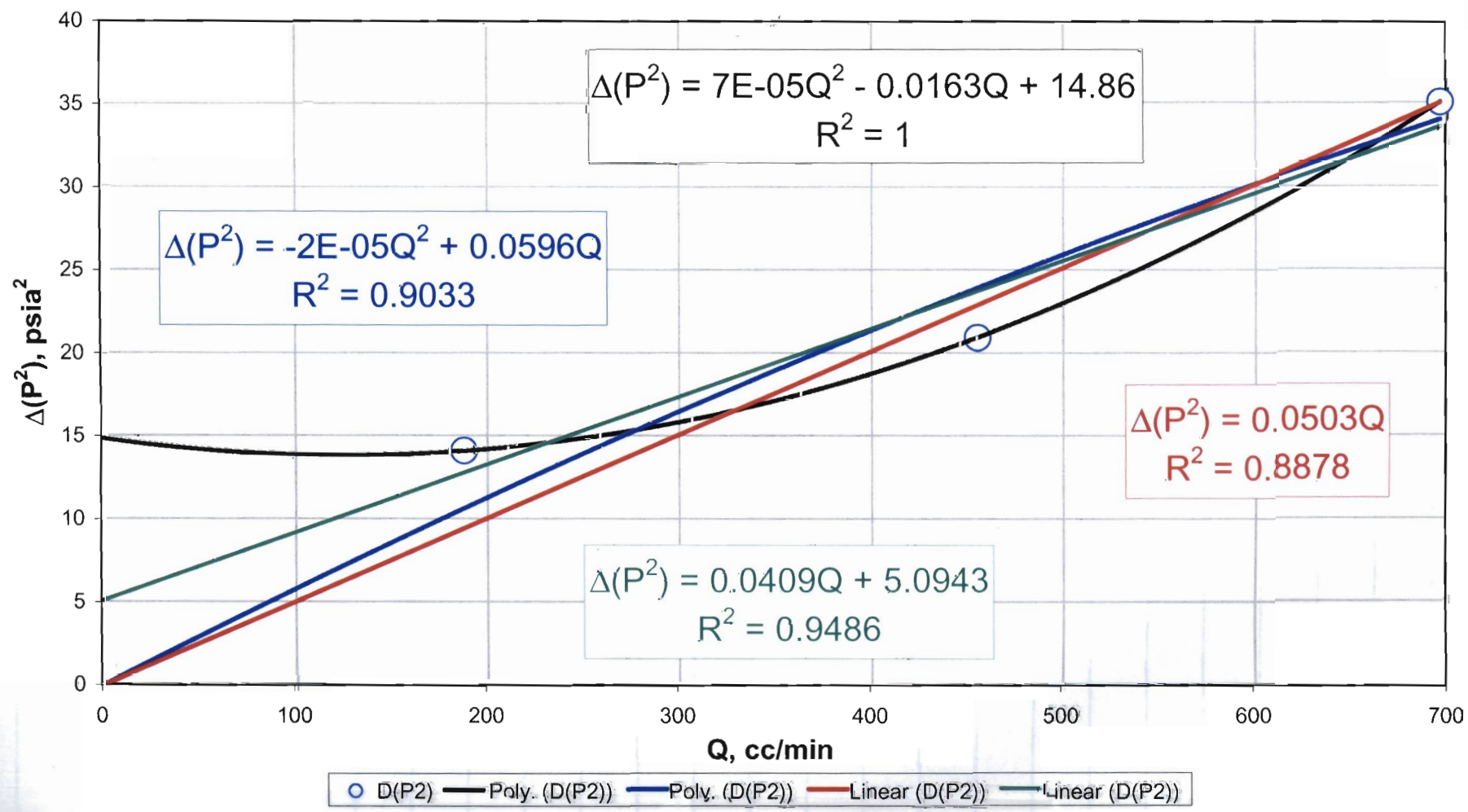
RMW, or log/03



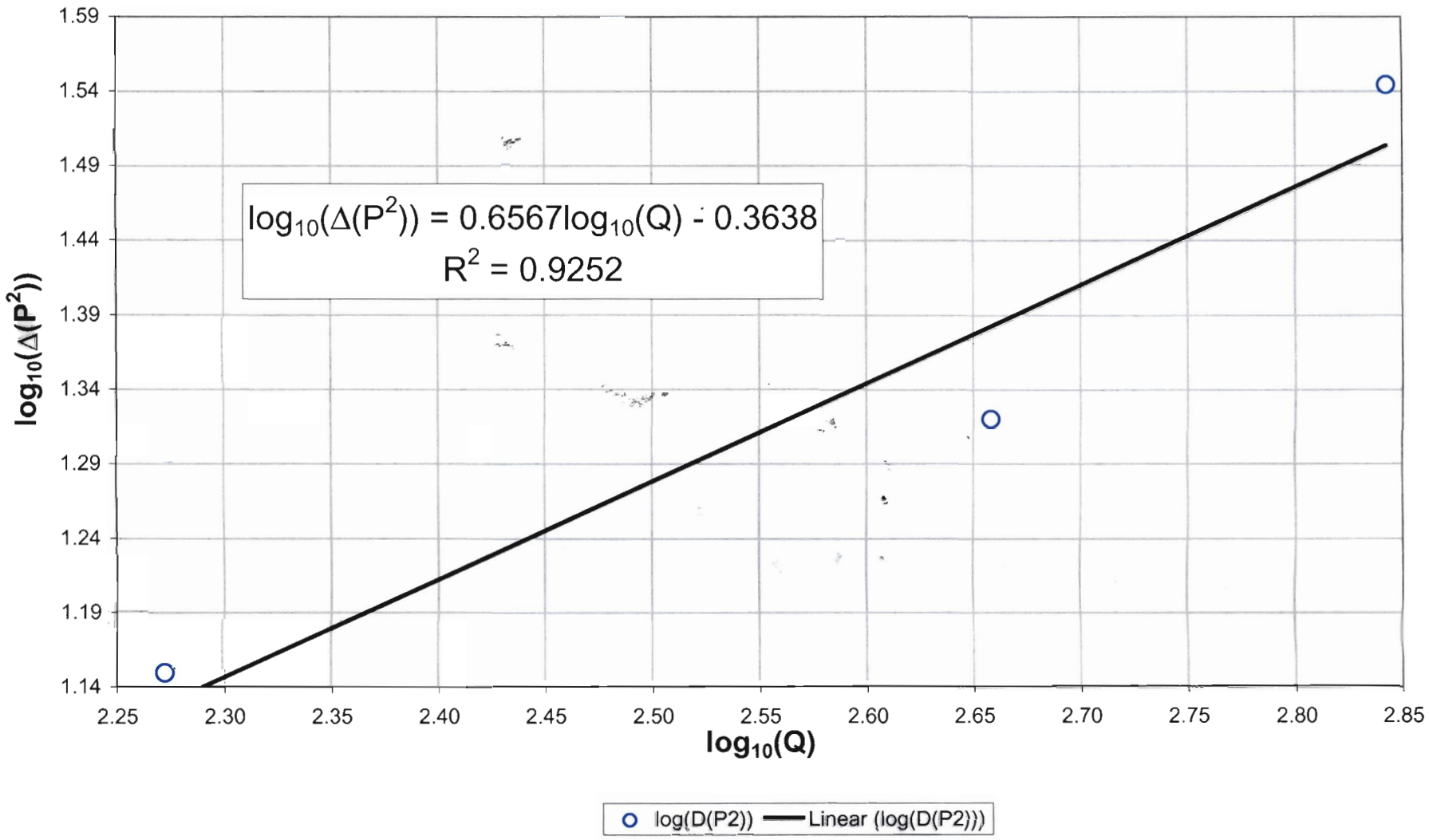
Final check for high velocity flow effects:
 High velocity flow effects are present when the slope is non-zero and positive.
 D Transect : Drillhole -4



Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -3

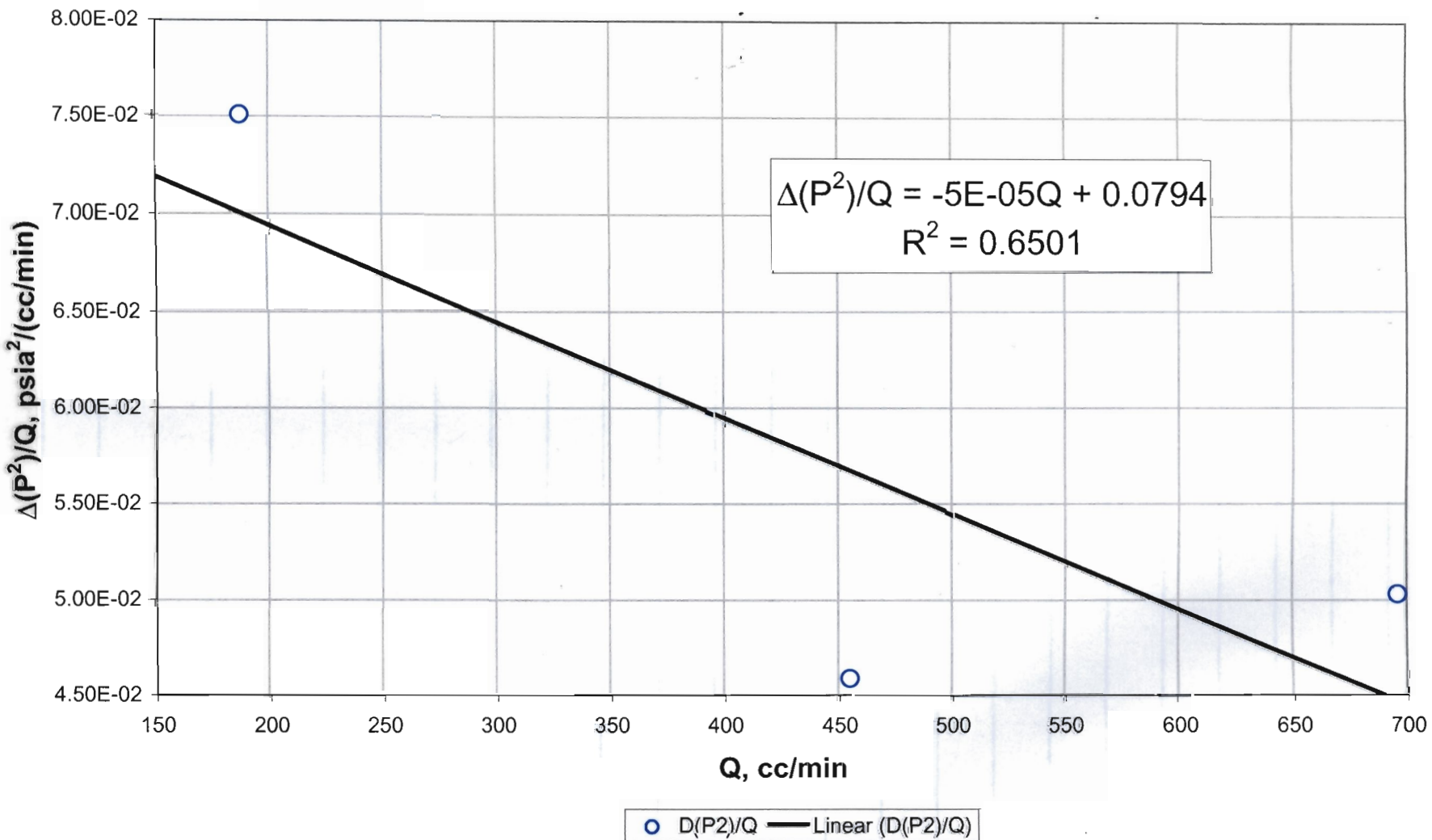


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)
D Transect: Drillhole -3



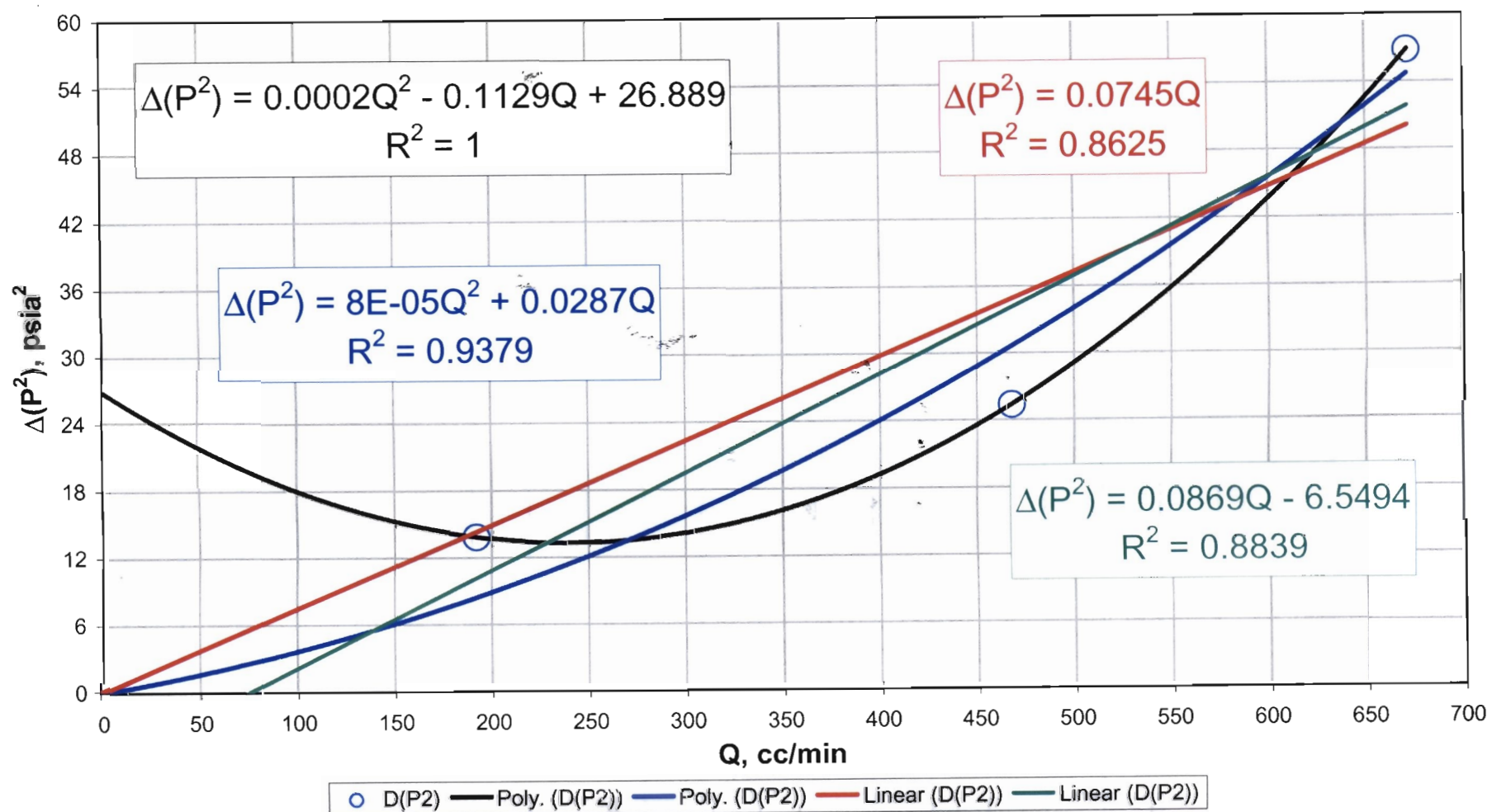
RMM, 01/03/03

Final check for high velocity flow effects:
High velocity flow effects are present when the slope is non-zero and positive.
D Transect : Drillhole -3



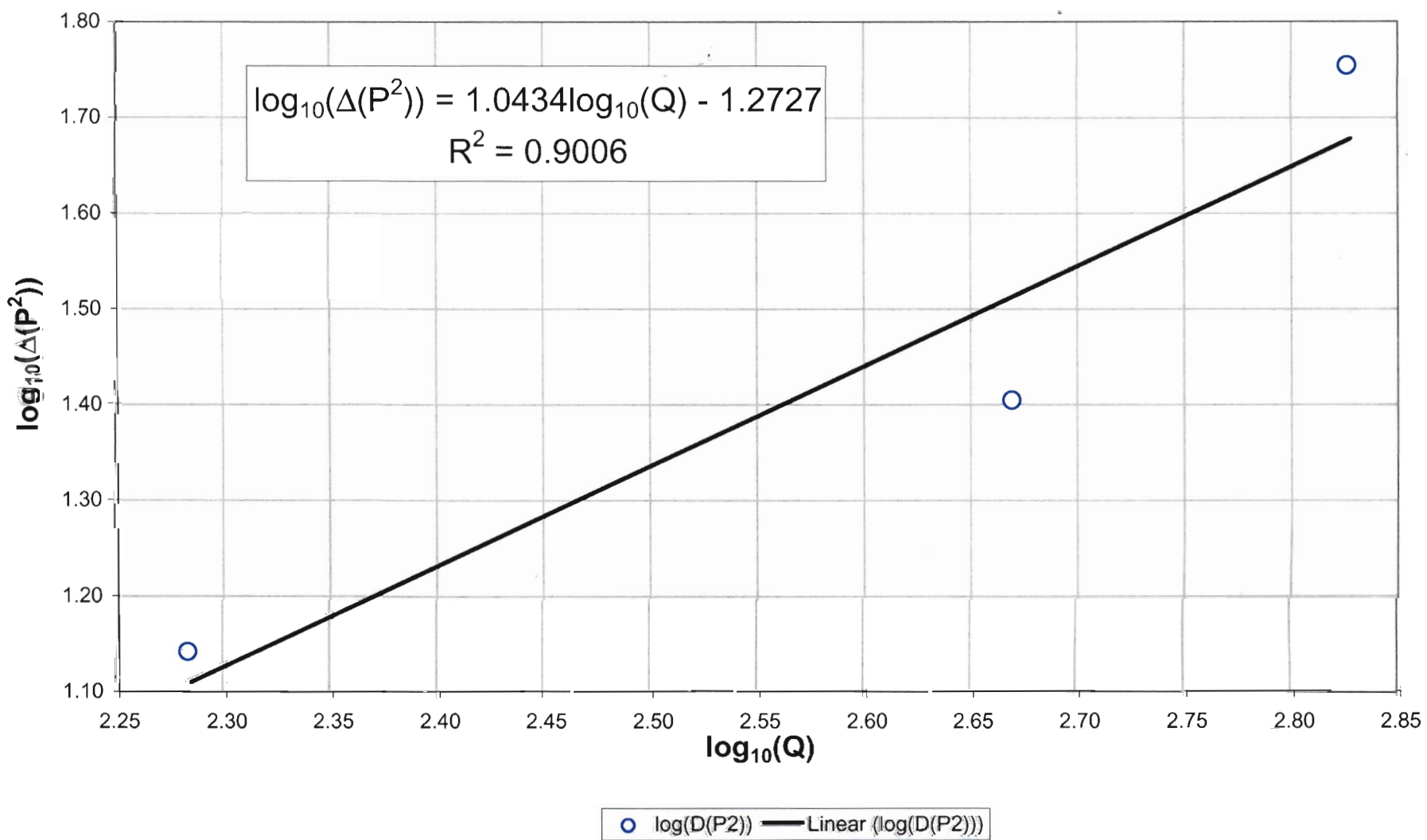
RMM, 01/03/03

Relationship between steady-state differential pressures squared and flowrate:
 If relationship is linear, with the ordinate intercept nearly zero,
 there is no high velocity flow effect.
 D Transect: Drillhole -2



RNM, 01/03/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of
 high-velocity flow effects (when the slope is greater than unity)
 D Transect: Drillhole -2



RNM, 01/03/03