

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Amy Cotter, Engineer
FROM: Shane Byrum, Engineer *SB*
DATE: September 6, 2006
SUBJECT: Update Effluent Limits

Name of facility: Anthony Forest Products – Urbana Mill

NPDES Permit No. AR0047384

Are there any changes from previous permit? Yes _____ NO X

The following **Effluent Limits** and the **receiving stream** exist in WQMP, please confirm the accuracy:

Effluent Limits: 30 (BOD5) year- round

Q = 0.07 MGD

The receiving stream is: unnamed tributary to North Lapile Creek

County: Union

Planning Segment: 2D

Previous permit 7Q10: _____

From: Amy Cotter
TO: Shane Byrum

7Q10 = 0 cfs
less than 10 square miles X
more than 10 square miles _____

May affect water of another State _____ Yes X No

NPDES PERMIT FILE
NPDES # AR0047384
AFIN # 70-00068

Permit PN

Correspondence
(17) _____
Technical Backup
1-5-07 814 Date Scanned

Justification

*Renew as is, intermittent discharge during storm events when N. Lapile Creek flow \geq 0.6 cfs. year-round DO = 2 mg/L. MultiSMP desktop model.
AC 9/13/06*

Model Input Data

Facility Name: Anthony Forest Products - Urbana Mill

Permit Number: AR0047384 PN Date: 5-27-02

Lat./Long. 33° 09' 46", 92° 26' 52"

W.S. Drainage Area (mi²) < 10 Ecoregion: GCP

	Critical Season (May-Oct.)	Primary Season (Nov.-Apr.)
D.O. Standard (mg/L)	2	5
Temp. Standard (°C)	30	22

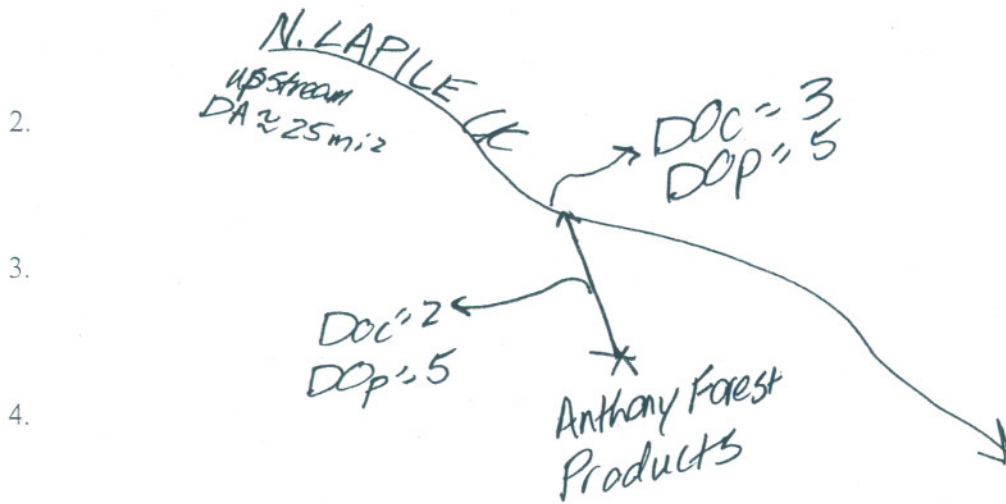
Q_{DESIGN} (MGD): 0.07 Planning Seg. 2D

Receiving Stream: un. trib (N. Lapile Creek)

HUC + reach code: 80402024005 Permit type: industrial

Other Facilities

	<u>Name</u>	<u>Permit#</u>	<u>Coord.</u>	<u>Seg?</u>	<u>PN</u>
1.	<u>none</u>				



Engineer: AC
Date: 9-11-06

ANTHONY FOREST PRODUCTS

Section 9

Township 18 South

Range 13 West

1236 Urbana Road

Urbana, AR 71768

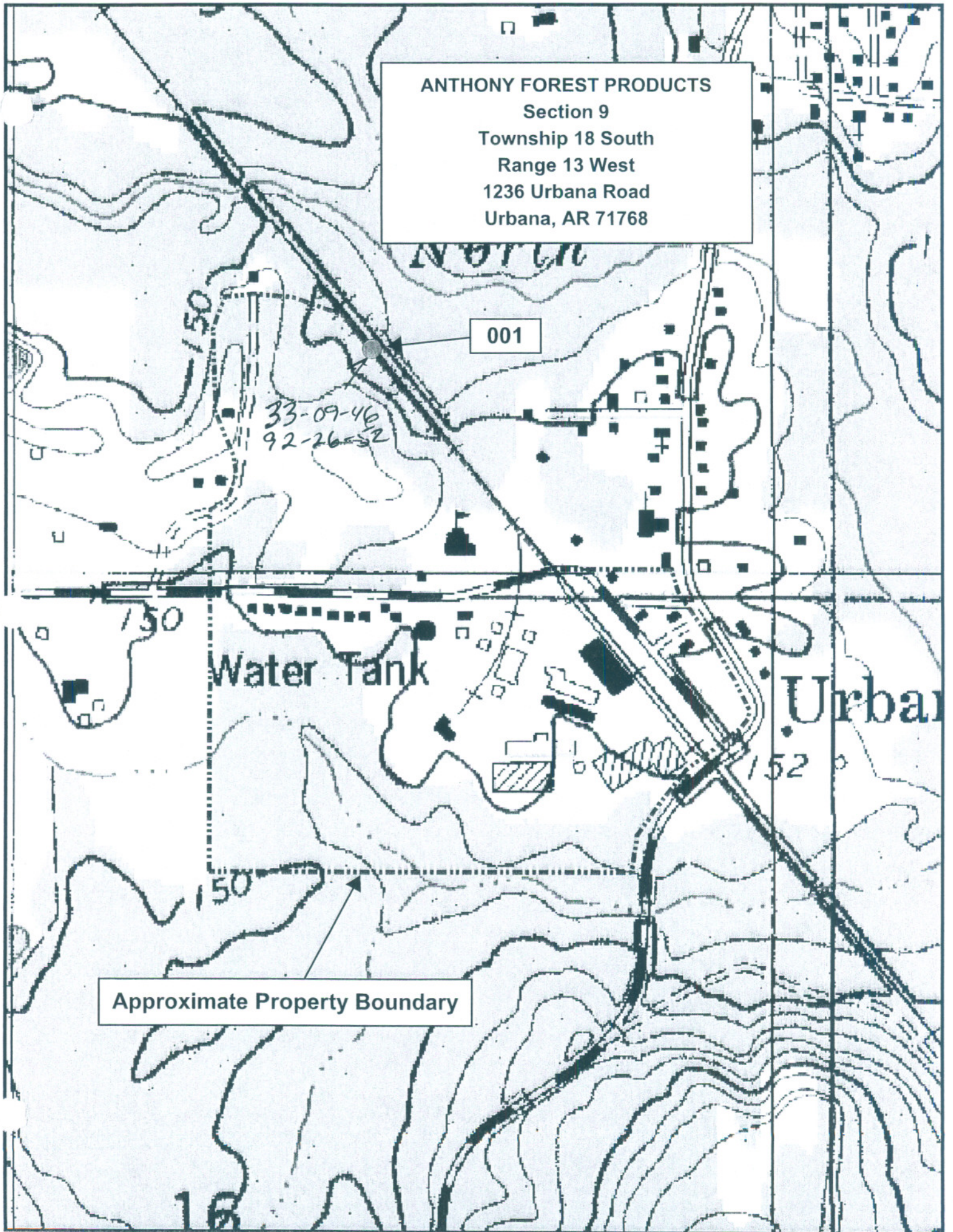
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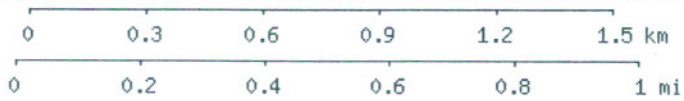
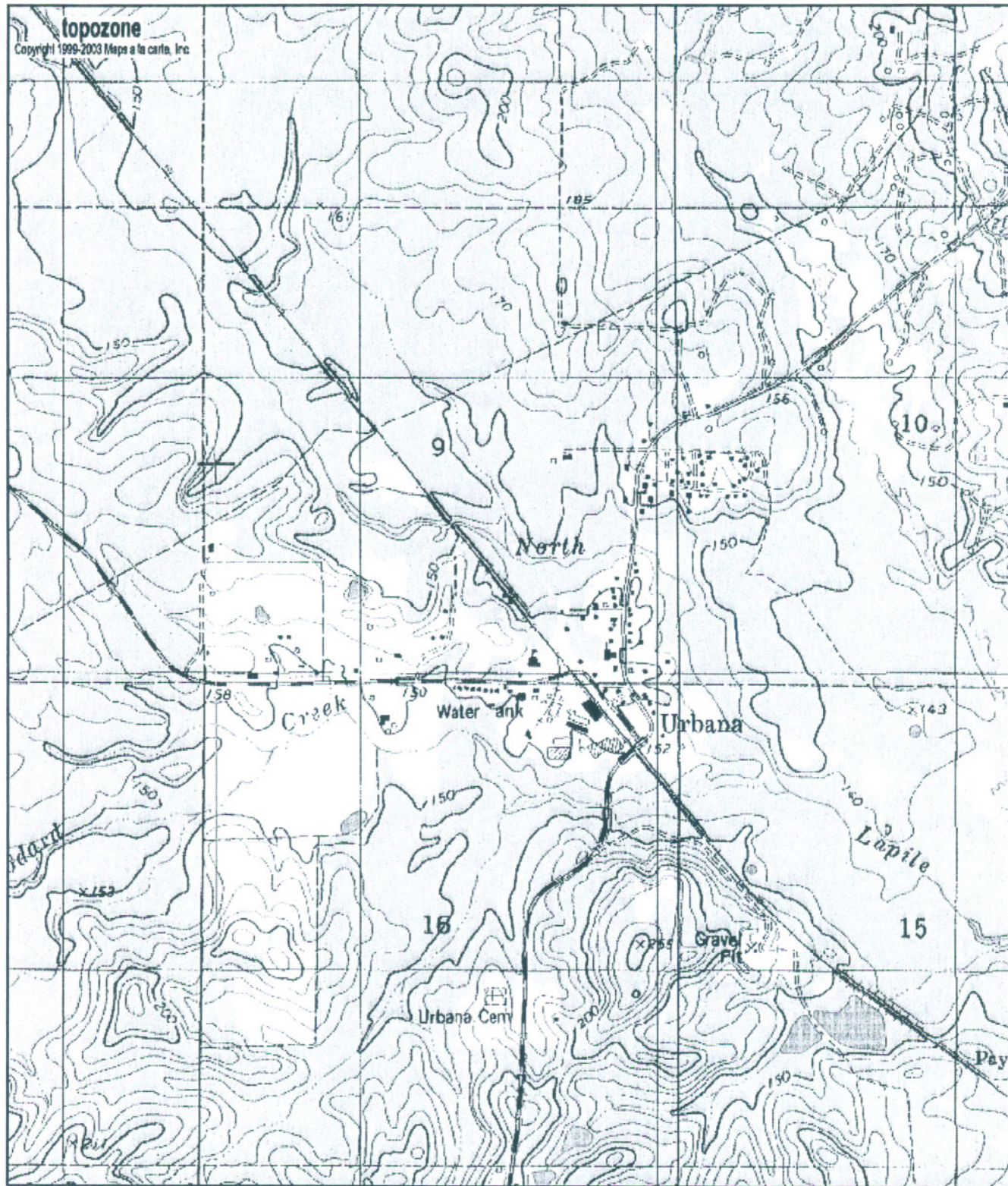
33-09-46
92-26-52

Water Tank

Urbana

Approximate Property Boundary





33° 09' 46"N, 92° 26' 52"W (NAD83/WGS84)

USGS Urbana (AR) Quadrangle
Projection is UTM Zone 15 NAD83 Datum



BVC

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*****
*                               SIMPLIFIED METHOD PROGRAM                               *
*                               COMPLETE INPUT LISTING                               *
*****

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47384-C.SMP

----*--*--* Run Information *--*--*--*--*

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Name of receiving stream ----- UnTrib/N.LapileCk
Number of discharges ----- 2
Number of reaches ----- 2
Reaeration type ----- O' Connor-Dobbins
Run title ----- AnthonyForestProd_Cr

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----*--*--* Upstream Parameters *--*--*--*--*

Parameter	Value	Comment
Flow (cfs)	0.000	
Temperature (°C)	30.000	
Dissolved Oxygen (mg/l)	-0.000	
5-Day BOD (mg/l)	-0.000	
Ult. CBOD / 5-Day BOD	-0.000	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	

----*--*--* Effluent Parameters *--*--*--*--*

Number of Discharges = 2

For Discharge Number 1 (AnthonyForestPr)

Parameter	Value	Comment
Flow (MGD)	0.070	
Temperature (°C)	30.000	
Dissolved Oxygen (mg/l)	2.000	
5-Day BOD (mg/l)	30.000	BOD5 = 30 mg/L
Ult. CBOD / 5-Day BOD	2.300	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	1.000	DO = 2 mg/L

For Discharge Number 2 (U/S N.Lapile)

Parameter	Value	Comment
Flow (MGD)	0.600	upstream Q = 0.6 cfs
Temperature (°C)	30.000	
Dissolved Oxygen (mg/l)	4.700	60% sat.
5-Day BOD (mg/l)	2.500	field measured value
Ult. CBOD / 5-Day BOD	2.300	from old model
pH (su)	-0.000	
Ammonia (mg/l)	0.100	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	2.000	

--*-*-* Reach Information *-*-*-*-*

Number of Reaches = 2
 Reaeration Type is O'Connor-Dobbins

For Reach Number 1

Parameter	Value	Comment
Length (mile)	0.030	
Velocity (fps)	0.100	
Slope (ft/mile)	-0.000	
Average Depth (ft)	0.750	
Temperature (°C)	30.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ² /day)	1.800	k20=1.0
Photosynthesis/respiration (mg/L/day)	-0.000	
Temperature-corrected BOD removal rate (1/day)	0.475	
Temperature-corrected NH3 decay rate (1/day)	0.648	
Calculated reaeration rate at 20° C (1/day)	6.281	
Temperature-corrected reaeration rate (1/day)	7.969	
Calculated reach-averaged width (ft)	1.443	

For Reach Number 2

Parameter	Value	Comment
Length (mile)	2.000	
Velocity (fps)	0.100	
Slope (ft/mile)	-0.000	
Average Depth (ft)	2.700	
Temperature (°C)	30.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ² /day)	0.900	k20=0.5
Photosynthesis/respiration (mg/L/day)	-0.000	
Temperature-corrected BOD removal rate (1/day)	0.475	
Temperature-corrected NH3 decay rate (1/day)	0.648	
Calculated reaeration rate at 20° C (1/day)	0.919	
Temperature-corrected reaeration rate (1/day)	1.167	
Calculated reach-averaged width (ft)	3.836	

--*-*-* Results for UnTrib/N.LapileCk *-*-*-*-*

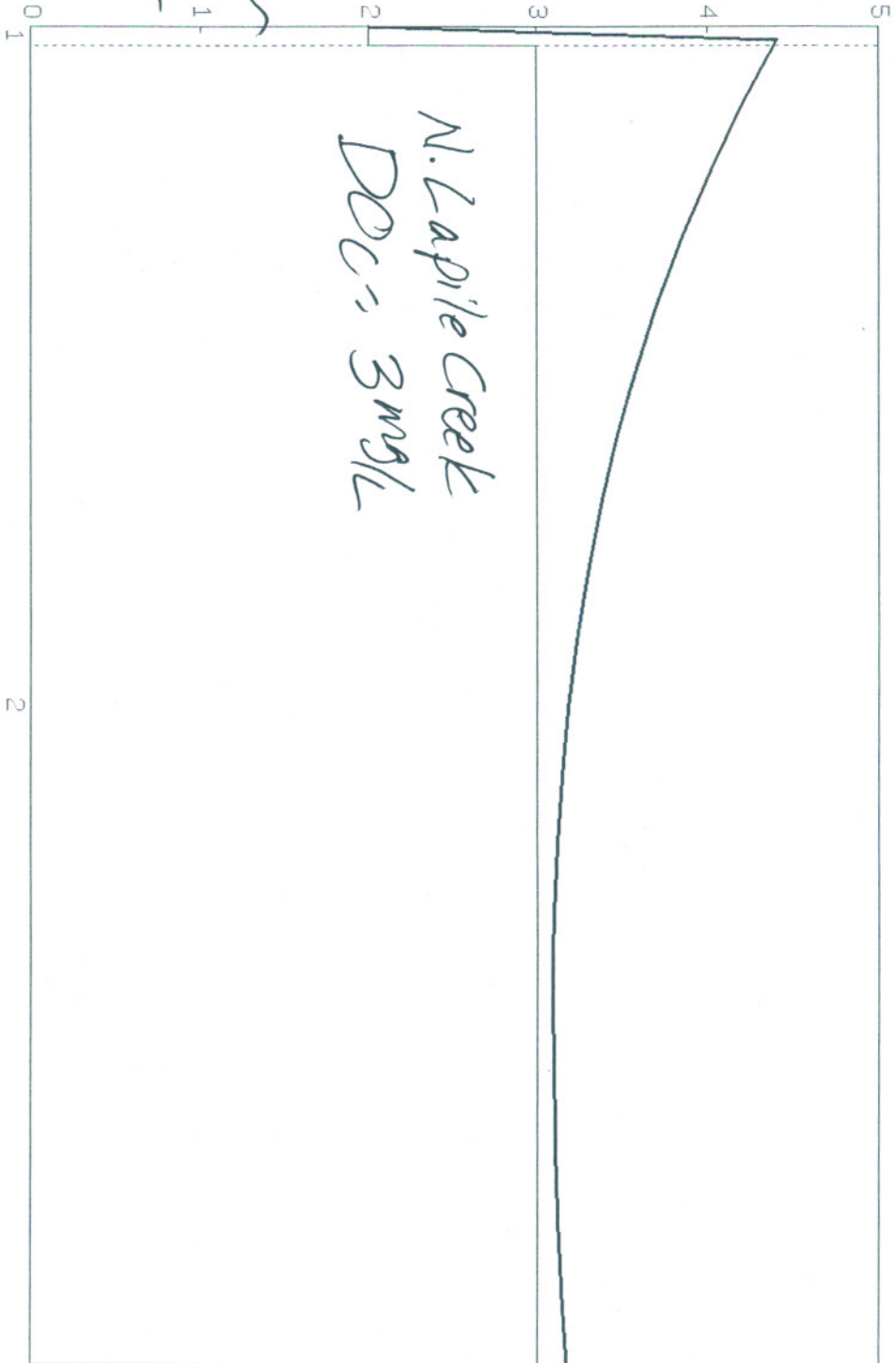
Discharge is to -- UnTrib/N.LapileCk
 Run Title is -- AnthonyForestProd_Cr

River Mile	DO Predicted	DO Observed	BOD Predicted	BOD Observed	NH3 Predicted	NH3 Observed
2.030	2.000		69.000		-0.000	
2.010	4.421		12.316		0.090	
1.910	4.207		11.964		0.086	
1.810	4.018		11.622		0.083	
1.710	3.852		11.290		0.080	
1.610	3.707		10.967		0.076	
1.510	3.582		10.653		0.073	
1.410	3.474		10.348		0.071	
1.310	3.383		10.052		0.068	
1.210	3.307		9.765		0.065	
1.110	3.244		9.485		0.063	

1.010	3.194	9.214	0.060
0.910	3.155	8.951	0.058
0.810	3.126	8.695	0.056
0.710	3.107	8.446	0.054
0.610	3.096	8.204	0.051
0.510	3.094	7.970	0.049
0.410	3.098	7.742	0.048
0.310	3.108	7.520	0.046
0.210	3.124	7.305	0.044
0.110	3.146	7.096	0.042
0.010	3.172	6.893	0.041

Dissolved Oxygen Profile
AnthonyForestProd_Cr

DO (mg/L)



un.trib
DO = 2 mg/L

N. Lapile Creek
DDC = 3 mg/L

Max unionized ammonia = 0.0000 mg/L

Reach

copy of old model
PN 5-27-02

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
WATER QUALITY MANAGEMENT PLAN UPDATE
SUMMARY SHEET

Type of Discharge: Municipal___, Industrial___, Other__x__

Facility Name ANTHONY FOREST PRODUCTS-URBANA MILL

Receiving Stream UNNAMED TRIBUTARY OF NORTH LAPILE CREEK

Planning Segment 2D County UNION

Permit # AR0047384 Update Method _____

Effluent Limits (CBOD5/TSS/NH3N/EFF.D.O.) Design Flow (MGD) 0.07

Critical Season 50 MG/L BOD5 YEAR-ROUND

Primary Season _____

Justification MULTISMP MODEL

Already included in WQMP Y/N ___ N ___

Receiving Stream _____

Effluent Limits _____

Section, Range & Township, or Latitude and Longitude

Existing _____

New Site _____

W.Q. Standards Changed by Use Attainability Analysis Y/N ___ N ___

If Yes, list changes _____

REMARKS: INTERMITTENT DISCHARGE, AVERAGES 2-3 TIMES/YEAR DURING STORM EVENTS

BVC

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*****
*                               SIMPLIFIED METHOD PROGRAM          *
*                               COMPLETE INPUT LISTING             *
*****
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----*--*--* Run Information *--*--*--*--*

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Name of receiving stream ----- North Lapile Creek
Number of discharges ----- 4
Number of reaches ----- 4
Reaeration type ----- O'Connor-Dobbins
Run title ----- Lapile-Crit-Over
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----*--*--* Upstream Parameters *--*--*--*--*

Parameter	Value	Comment
Flow (cfs)	0.000	
Temperature (øC)	28.000	
Dissolved Oxygen (mg/l)	4.700	
5-Day BOD (mg/l)	2.500	
Ult. CBOD / 5-Day BOD	2.300	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	

----*--*--* Effluent Parameters *--*--*--*--*

Number of Discharges = 4

For Discharge Number 1 (Anthony 001)

Parameter	Value	Comment
Flow (MGD)	0.070	run-off
Temperature (øC)	28.000	WQS + cooling
Dissolved Oxygen (mg/l)	6.200	calculated
5-Day BOD (mg/l)	50.000	modeled
Ult. CBOD / 5-Day BOD	2.500	est
pH (su)	-0.000	
Ammonia (mg/l)	0.000	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	1.000	

For Discharge Number 2 (u/s Lapile)

Parameter	Value	Comment
Flow (MGD)	0.730	run-off
Temperature (øC)	28.000	WQS + cooling
Dissolved Oxygen (mg/l)	4.700	Field/60%sat
5-Day BOD (mg/l)	2.500	Field
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	

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Beginning of Reach Number 2.000

For Discharge Number 3 (UT to Lapile)

Parameter	Value	Comment
Flow (MGD)	0.730	run-off
Temperature (øC)	28.000	WQS + cooling
Dissolved Oxygen (mg/l)	4.700	60% sat
5-Day BOD (mg/l)	4.000	est.
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	3.000	

For Discharge Number 4 (UT to Lapile)

Parameter	Value	Comment
Flow (MGD)	0.220	run-off
Temperature (øC)	28.000	WQS + cooling
Dissolved Oxygen (mg/l)	4.700	60%Sat
5-Day BOD (mg/l)	2.500	Field
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	4.000	

----*--*--* Reach Information *--*--*--*--*

Number of Reaches = 4
 Reaeration Type is O'Connor-Dobbins

For Reach Number 1

Parameter	Value	Comment
Length (mile)	0.030	
Velocity (fps)	0.100	
Slope (ft/mile)	4.700	
Average Depth (ft)	0.750	
Temperature (øC)	28.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ² /day)	1.300	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate (1/day)	0.433
Temperature-corrected NH3 decay rate (1/day)	0.555
Calculated reaeration rate at 20ø C (1/day)	6.281
Temperature-corrected reaeration rate (1/day)	7.599
Calculated reach-averaged width (ft)	1.443

For Reach Number 2

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	4.700	
Average Depth (ft)	2.700	
Temperature (øC)	28.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	

Lapilcl.out

Sediment Oxygen Demand (g/m³/day) 1.000
 Photosynthesis/respiration (mg/L/day) -0.000

Temperature-corrected BOD removal rate (1/day) 0.433
 Temperature-corrected NH3 decay rate (1/day) 0.555
 Calculated reaeration rate at 20ø C (1/day) 0.919
 Temperature-corrected reaeration rate (1/day) 1.112
 Calculated reach-averaged width (ft) 4.581

For Reach Number 3

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	4.700	
Average Depth (ft)	2.700	
Temperature (øC)	28.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ³ /day)	1.000	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate (1/day) 0.433
 Temperature-corrected NH3 decay rate (1/day) 0.555
 Calculated reaeration rate at 20ø C (1/day) 0.919
 Temperature-corrected reaeration rate (1/day) 1.112
 Calculated reach-averaged width (ft) 8.761

For Reach Number 4

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	4.700	
Average Depth (ft)	2.700	
Temperature (øC)	28.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ³ /day)	1.000	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate (1/day) 0.433
 Temperature-corrected NH3 decay rate (1/day) 0.555
 Calculated reaeration rate at 20ø C (1/day) 0.919
 Temperature-corrected reaeration rate (1/day) 1.112
 Calculated reach-averaged width (ft) 10.020

----*--* Results for North Lapile Creek *--*--*--*

Discharge is to -- North Lapile Creek
 Run Title is -- Lapile-Crit-Over

River Mile	DO Predicted	DO Observed	BOD Predicted	BOD Observed	NH3 Predicted	NH3 Observed
3.000	6.200		125.000		0.000	
2.980	4.782		16.127		0.009	
2.930	4.633		15.915		0.009	
2.880	4.492		15.705		0.009	
2.830	4.358		15.499		0.009	

2.780	4.231	15.295	0.009
2.730	4.111	15.094	0.008
2.680	3.998	14.895	0.008
2.630	3.891	14.699	0.008
2.580	3.791	14.506	0.008
2.530	3.696	14.315	0.008
2.480	3.607	14.127	0.008
2.430	3.523	13.941	0.008
2.380	3.444	13.758	0.007
2.330	3.371	13.577	0.007
2.280	3.302	13.399	0.007
2.230	3.238	13.222	0.007
2.180	3.178	13.049	0.007
2.130	3.123	12.877	0.007
2.080	3.072	12.708	0.007
2.030	3.024	12.541	0.007
1.980	3.801	10.860	0.008
1.930	3.753	10.718	0.008
1.880	3.708	10.577	0.008
1.830	3.667	10.438	0.008
1.780	3.629	10.300	0.008
1.730	3.594	10.165	0.008
1.680	3.562	10.031	0.007
1.630	3.533	9.899	0.007
1.580	3.506	9.769	0.007
1.530	3.482	9.641	0.007
1.480	3.461	9.514	0.007
1.430	3.441	9.389	0.007
1.380	3.425	9.265	0.007
1.330	3.410	9.144	0.007
1.280	3.397	9.023	0.006
1.230	3.387	8.905	0.006
1.180	3.378	8.788	0.006
1.130	3.371	8.672	0.006
1.080	3.366	8.558	0.006
1.030	3.362	8.445	0.006
0.980	3.529	8.010	0.006
0.930	3.527	7.904	0.006
0.880	3.526	7.800	0.006
0.830	3.527	7.698	0.006
0.780	3.529	7.596	0.006
0.730	3.533	7.497	0.006
0.680	3.537	7.398	0.006
0.630	3.543	7.301	0.006
0.580	3.550	7.205	0.006
0.530	3.558	7.110	0.005
0.480	3.566	7.016	0.005
0.430	3.576	6.924	0.005
0.380	3.587	6.833	0.005
0.330	3.598	6.743	0.005
0.280	3.610	6.655	0.005
0.230	3.623	6.567	0.005
0.180	3.637	6.481	0.005
0.130	3.651	6.396	0.005
0.080	3.666	6.311	0.005
0.030	3.682	6.228	0.005
-0.000			
-0.020	3.698	6.147	0.005

BVC

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*****
*                               SIMPLIFIED METHOD PROGRAM          *
*                               COMPLETE INPUT LISTING             *
*****
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----- Run Information *-----*

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Name of receiving stream ----- North Lapile Creek
Number of discharges ----- 4
Number of reaches ----- 4
Reaeration type ----- O'Connor-Dobbins
Run title ----- Lapile-Seas-Over
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----- Upstream Parameters *-----*

Parameter	Value	Comment
Flow (cfs)	0.000	
Temperature (øC)	20.000	
Dissolved Oxygen (mg/l)	5.400	
5-Day BOD (mg/l)	2.500	
Ult. CBOD / 5-Day BOD	2.300	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	

----- Effluent Parameters *-----*

Number of Discharges = 4

For Discharge Number 1 (Anthony 001)

Parameter	Value	Comment
Flow (MGD)	0.060	run-off
Temperature (øC)	20.000	WQS + cooling
Dissolved Oxygen (mg/l)	7.300	calculated
5-Day BOD (mg/l)	50.000	modeled
Ult. CBOD / 5-Day BOD	2.500	est
pH (su)	-0.000	
Ammonia (mg/l)	0.000	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	1.000	

For Discharge Number 2 (U/S N.Lapile)

Parameter	Value	Comment
Flow (MGD)	1.000	Field/est.
Temperature (øC)	20.000	WQS + cooling
Dissolved Oxygen (mg/l)	5.700	63%/field
5-Day BOD (mg/l)	2.500	Field
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	

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Beginning of Reach Number 2.000

For Discharge Number 3 (Woodard Crk.)

Parameter	Value	Comment
Flow (MGD)	1.000	Field/est.
Temperature (øC)	20.000	WQS + cooling
Dissolved Oxygen (mg/l)	5.700	63%/field
5-Day BOD (mg/l)	4.000	est.
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	3.000	

For Discharge Number 4 (UT to N.Lapile)

Parameter	Value	Comment
Flow (MGD)	0.300	Field/est.
Temperature (øC)	20.000	WQS + cooling
Dissolved Oxygen (mg/l)	5.700	63%/field
5-Day BOD (mg/l)	2.500	Field
Ult. CBOD / 5-Day BOD	2.300	default
pH (su)	-0.000	
Ammonia (mg/l)	0.010	
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	4.000	

----*--*--* Reach Information *--*--*--*--*

Number of Reaches = 4
Reaeration Type is O'Connor-Dobbins

For Reach Number 1

Parameter	Value	Comment
Length (mile)	0.030	
Velocity (fps)	0.100	
Slope (ft/mile)	3.800	
Average Depth (ft)	0.750	
Temperature (øC)	20.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ² /day)	1.300	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate (1/day)	0.300
Temperature-corrected NH3 decay rate (1/day)	0.300
Calculated reaeration rate at 20ø C (1/day)	6.281
Temperature-corrected reaeration rate (1/day)	6.281
Calculated reach-averaged width (ft)	1.237

For Reach Number 2

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	3.800	
Average Depth (ft)	2.700	
Temperature (øC)	20.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	

Sediment Oxygen Demand	(g/m ³ /day)	1.000
Photosynthesis/respiration	(mg/L/day)	-0.000

Temperature-corrected BOD removal rate	(1/day)	0.300
Temperature-corrected NH3 decay rate	(1/day)	0.300
Calculated reaeration rate at 20ø C	(1/day)	0.919
Temperature-corrected reaeration rate	(1/day)	0.919
Calculated reach-averaged width	(ft)	6.069

For Reach Number 3

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	3.800	
Average Depth (ft)	2.700	
Temperature (øC)	20.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ³ /day)	1.000	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate	(1/day)	0.300
Temperature-corrected NH3 decay rate	(1/day)	0.300
Calculated reaeration rate at 20ø C	(1/day)	0.919
Temperature-corrected reaeration rate	(1/day)	0.919
Calculated reach-averaged width	(ft)	11.795

For Reach Number 4

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	3.800	
Average Depth (ft)	2.700	
Temperature (øC)	20.000	Calculated
BOD Removal Rate (1/day)	0.300	
NH3 Decay Rate (1/day)	0.300	
Sediment Oxygen Demand (g/m ³ /day)	1.000	
Photosynthesis/respiration (mg/L/day)	-0.000	

Temperature-corrected BOD removal rate	(1/day)	0.300
Temperature-corrected NH3 decay rate	(1/day)	0.300
Calculated reaeration rate at 20ø C	(1/day)	0.919
Temperature-corrected reaeration rate	(1/day)	0.919
Calculated reach-averaged width	(ft)	13.513

----*--* Results for North Lapile Creek *--*--*--*

Discharge is to -- North Lapile Creek
Run Title is -- Lapile-Seas-Over

River Mile	DO Predicted	DO Observed	BOD Predicted	BOD Observed	NH3 Predicted	NH3 Observed
3.000	7.300		125.000		0.000	
2.980	5.769		12.474		0.009	
2.930	5.707		12.360		0.009	
2.880	5.647		12.247		0.009	
2.830	5.591		12.136		0.009	

2.780	5.537	12.025	0.009
2.730	5.485	11.915	0.009
2.680	5.436	11.807	0.009
2.630	5.390	11.699	0.009
2.580	5.345	11.592	0.009
2.530	5.303	11.486	0.009
2.480	5.263	11.381	0.009
2.430	5.225	11.278	0.009
2.380	5.188	11.175	0.008
2.330	5.154	11.073	0.008
2.280	5.122	10.972	0.008
2.230	5.091	10.872	0.008
2.180	5.063	10.772	0.008
2.130	5.036	10.674	0.008
2.080	5.010	10.577	0.008
2.030	4.986	10.480	0.008
1.980	5.321	9.810	0.009
1.930	5.296	9.720	0.009
1.880	5.272	9.631	0.009
1.830	5.249	9.543	0.009
1.780	5.228	9.456	0.009
1.730	5.208	9.370	0.008
1.680	5.190	9.285	0.008
1.630	5.172	9.200	0.008
1.580	5.156	9.116	0.008
1.530	5.142	9.033	0.008
1.480	5.128	8.950	0.008
1.430	5.116	8.869	0.008
1.380	5.104	8.788	0.008
1.330	5.094	8.708	0.008
1.280	5.085	8.628	0.008
1.230	5.076	8.549	0.008
1.180	5.069	8.471	0.008
1.130	5.062	8.394	0.008
1.080	5.057	8.317	0.008
1.030	5.052	8.242	0.007
0.980	5.131	7.859	0.008
0.930	5.128	7.787	0.008
0.880	5.126	7.716	0.008
0.830	5.125	7.646	0.008
0.780	5.124	7.576	0.007
0.730	5.124	7.507	0.007
0.680	5.125	7.439	0.007
0.630	5.126	7.371	0.007
0.580	5.128	7.303	0.007
0.530	5.130	7.237	0.007
0.480	5.133	7.171	0.007
0.430	5.137	7.105	0.007
0.380	5.141	7.041	0.007
0.330	5.145	6.976	0.007
0.280	5.150	6.913	0.007
0.230	5.155	6.850	0.007
0.180	5.161	6.787	0.007
0.130	5.167	6.725	0.007
0.080	5.174	6.664	0.007
0.030	5.181	6.603	0.006
-0.000			
-0.020	5.188	6.543	0.006