



Quantitative Value Assessment
Steroids Separation
Customer: Contract Lab
Date: 10/1/02

	Leading ODS	ZirChrom-PBD
Column Cost	\$395.00	\$595.00
Analysis Time (min)	10.0	5.0
Average Time per Successful Cycle (min)	12.3	7.2
Possible Cycles per Instrument per Year	42,705	73,474
<u>Cost Components</u>		
<i>Column Cost per Successful Cycle</i>	\$1.01	\$1.30
<i>Solvent Cost per Successful Cycle</i>	\$0.02	\$0.04
<i>Waste Disposal Cost per Successful Cycle</i>	\$0.01	\$0.01
<i>Total Fixed Cost per Successful Cycle</i>	\$2.37	\$1.38
<i>Total Operator Cost per Successful Cycle</i>	\$0.26	\$0.15
Total Cost per Analysis*	\$3.67	\$2.88
Savings per Instrument per Year**		\$57,672

**Note: Calculation does not include costs which are constant for all columns (eg. sample prep) or indirect costs related to the speed of the results.*

***Note: Savings is based on possible cycles per instrument per year using the ZirChrom column.*

Schedule of Column Costs

Contract Lab
10/1/02



Item	Current	Proposed
Column Type	Leading ODS	ZirChrom-PBD
Column Length (mm)	150	150
Column ID (mm)	2.1	3.0
Column Cost	\$395.00	\$595.00
Useful Column Lifetime (Injections)	400	466
Sample	Steroids	Steroids
Flow Rate (mL/min)	0.20	0.60
Analysis Time (min)	10.0	5.0
Wait Time before Next Injection (min)	2.0	2.0
Cycle Time (min)	12.0	7.0
Mobile Phase per Cycle (mL)	2.40	4.20
Column Lifetime in Column Volumes	1,848	1,846
Failed Cycles before Column Replacement	10	10
Successful Cycle Percentage	97.50%	97.85%
Average Time per Successful Cycle (min)	12.3	7.2
Mobile Phase per Successful Cycle (mL)	2.46	4.29
Column Cost per Successful Cycle	\$1.01	\$1.30

Schedule of Solvent-Related Costs

Contract Lab

10/1/02



Item	Current	Proposed
Mobile Phase Component 1	Water	Water
Average Composition - Component 1	50.00%	75.00%
Cost per Liter - Component 1	\$5.00	\$5.00
Mobile Phase Component 2	Methanol	ACN/THF
Average Composition - Component 2	50.00%	25.00%
Cost per Liter - Component 2	\$15.00	\$20.00
Solvent Cost per Successful Cycle	\$0.02	\$0.04
Waste Created per Successful Cycle (L)	0.0025	0.0043
Waste Disposal Cost per Liter	\$2.25	\$2.25
Waste Disposal Cost per Successful Cycle	\$0.01	\$0.01

Schedule of Fixed Costs

Contract Lab

10/1/02



Item	Current	Proposed
Hardware/Equipment	\$300,000.00	\$300,000.00
Software	\$0.00	\$0.00
Service Contract (Yearly)	\$40,000.00	\$40,000.00
Lamps/Multipliers (Yearly)	\$1,000.00	\$1,000.00
Other Spare Parts (Yearly)	\$2,000.00	\$2,000.00
Lab Space Cost (Yearly)	\$750.00	\$750.00
Effective Life of Equipment (Years)	5	5
Total Fixed Cost over Effective Life	\$518,750.00	\$518,750.00
Days per Year in Operation	365	365
Hours per Day in Operation	24	24
Fixed Cost per Hour of Operation	\$11.84	\$11.84
Fixed Cost per Cycle	\$2.37	\$1.38

Schedule of Operator Costs
Contract Lab
10/1/02



Item	Current	Proposed
Salary	\$36,000.00	\$36,000.00
Benefits (as a % of Salary)	25.00%	25.00%
% Interaction during Analysis	25.00%	25.00%
Days per Year in Operation	365	365
Hours per Day in Operation	24	24
Operator Cost per Hour of Operation	\$1.28	\$1.28
Operator Cost per Cycle	\$0.26	\$0.15