pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0102601**
Facility Type	**Non-Municipal**	APS ID	**1093983**
Major / Minor	**Minor**	Authorization ID	**1473676**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Jones Estates Franklin Village PA LLC**	Facility Name	**Franklin Mobile Home Village**
Applicant Address	2310 South Miami Boulevard Suite 238	Facility Address	Village Drive
	Durham, NC 27703-4900		Butler, PA 16001
Applicant Contact	Kellen Buss	Facility Contact	John Foris (Operator)
Applicant Phone	(419) 357-9091 (kbuss@rentstackhouse.com)	Facility Phone	(412) 445-9145 (jforis@gmail.com)
Client ID	376258	Site ID	445459
Ch 94 Load Status	Not Overloaded	Municipality	Franklin Township
Connection Status		County	Butler
Date Application Received	May 4, 2017	EPA Waived?	Yes
Date Application Accepted	September 22, 2017	If No, Reason	

Purpose of Application: Renewal and transfer of a NPDES Permit for an existing discharge of treated sewage.

Summary of Review

A draft NPDES Permit was first posted in the PA Bulletin on July 28, 2018. No comments were received on that draft permit during the draft comment period. However, the final permit was not issued due to unresolved compliance issues and the need for a transfer application due to change of ownership. A transfer application was finally submitted on 6/9/2023 and outstanding violations have been resolved. Since it has been over two years since the permit was first drafted, the draft permit will be sent for public comment again prior to issuance.

The WQM Permit will be transferred to the new Permittee concurrently with the final NPDES Permit issuance.

Sludge use and disposal description and location(s): Sludge is hauled offsite by Dalton Services for dewatering and disposal.

There are currently 8 open violations listed in EFACTS for this client (2/29/2024).

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		Adam J. Pesek Adam J. Pesek, E.I.T. / Project Manager	February 29, 2024
X		*Vacant* / Environmental Engineer Manager	Okay to Draft JCD 3/4/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.028
Latitude	40º 53' 59"	Longitude	-79º 59' 33"
Quad Name	Mount Chestnut	Quad Code	1106
Wastewater Description:	Treated domestic sewage		
Receiving Waters	Unnamed Tributary to Mulligan Run	Stream Code	34996
NHD Com ID	126221176	RMI	0.65
Drainage Area	1.169	Yield (cfs/mi^2)	0.0428
Q_{7-10} Flow (cfs)	0.05	Q_{7-10} Basis	Buffalo Creek @ Freeport (1977-2011)
Elevation (ft)	1240	Slope (ft/ft)	
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Little Connoquenessing Creek Watershed

Background/Ambient Data		Data Source
pH (SU)	7.35	9/25/2014 stream sample taken 25 meters above discharge
Temperature (°C)	20	Default (CWF)
Hardness (mg/L)		
Other: NH_3-N (mg/l)	0.05	Stream survey sample taken on Crab Run

Nearest Downstream Public Water Supply Intake		Harmony Borough Water Authority	
PWS Waters	Little Connoquenessing Creek	Flow at Intake (cfs)	2.0
PWS RMI	1.1	Distance from Outfall (mi)	12

Changes Since Last Permit Issuance:

Other Comments: The TMDL mentioned above does not address Mulligan Run or its tributaries. Therefore, no monitoring of AMD metals will be required, or proposed, in the renewed permit.

Treatment Facility Summary

Treatment Facility Name: Franklin Mobile Home Village

WQM Permit No.	Issuance Date
1092405 A-1	10/20/2016

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Hypochlorite	0.028

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.028	69	Not Overloaded	Aerobic Digestion	Hauled offsite.

Changes Since Last Permit Issuance: The comminutor was removed and a trash basket and rail system was added on the influent line under Amendment No. 1.

Other Comments:

Compliance History	
Summary of DMRs:	There have been consistent violations of effluent limits over the past permit cycle which will hopefully be resolved under the new Permittee.
Summary of Inspections:	The last facility inspection was conducted on 4/20/2020. Issues/violations noted are as follow: 1. 25 Pa. Code 302.1201: Owner failed to comply with the Act or Chapter 302 regulations 2. 25 Pa. Code 92a.41(a)(12): Failure to submit monitoring reports or properly complete monitoring reports. 3. 25 Pa. Code 92a.41(a)(12): Failure to submit a required DMR supplemental report. 4. 25 Pa. Code 92a.41(a)(12): Failure to submit a required DMR supplemental report. 5. 25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition 6. 25 Pa. Code 92a.44: NPDES - Violation of effluent limits in Part A of permit NOV sent on September 25, 2019 for effluent violations. Effluent violations have continued with the most recent reported effluent violation occurring during February 2020. 7. 25 Pa. Code 92a.62: NPDES - Failure to pay annual fee Failure to pay annual fee.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from January 1, 2023 to December 31, 2023)

Parameter	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23
Flow (MGD) Average Monthly	0.010	0.026	0.019	0.004	0.025	0.004	0.011	0.010	0.010	0.010	0.010	0.010
pH (S.U.) Minimum	7.32	6.69	6.4	7.19	7.98	6.75	7.11	6.53	7.12	7.19	7.26	7.18
pH (S.U.) Maximum	7.85	7.10	7.2	7.38	8.64	7.12	7.68	7.12	7.40	7.38	7.41	7.63
DO (mg/L) Minimum	8.20	6.30	2.7	6.14	7.32	6.09	6.08	7.12	6.20	6.14	6.02	6.04
TRC (mg/L) Average Monthly	0.015	0.075	0.1	0.045	0.045	0.09	0.024	0.036	0.0385	0.036	0.045	0.036
TRC (mg/L) Instantaneous Maximum	0.14	0.1	0.1	0.05	0.05	0.19	0.047	0.048	0.047	0.048	0.05	0.048
CBOD5 (mg/L) Average Monthly	14.9	4.1	8.3	10.55	6.7	6.1	4.0	2.0	3.9	3.1	2.0	5.0
TSS (mg/L) Average Monthly	17.5	39.5	34.0	44.0	6.5	10.5	7.5	6.5	9.0	7.5	5.0	5.4
Fecal Coliform (CFU/100 ml) Geometric Mean	1834.83	379.32	457.95	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1860	1320	1070	1.0	1.0	2	1.0	1.0	1.0	1.0	1.0	1.0
Ammonia (mg/L) Average Monthly	4.85	3.40	4.60	3.0	0.1	2.40	11.20	0.4	0.15	0.20	0.10	1.60
Total Phosphorus (mg/L) Average Monthly	2.1	2.3	2.0	3.0	1.30	0.75	2.80	7.8	2.70	1.95	1.7	1.7

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .028
Latitude 40º 53' 59" **Longitude** -79º 59' 33"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Phosphorus, Total	2.0	Average Monthly		96.5
E. Coli	Report (No./100 ml)	IMAX	-	92a.61

Comments: The phosphorus limit is implemented for all dischargers to the Connoquenessing Creek basin above the confluence with Slippery Rock Creek.

Monitoring for E. Coli is placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nitrogen (5/1 – 10/31)	3.5	Average Monthly	WQM 7.0 Ver. 1.1
Dissolved Oxygen	4.0	Daily Minimum	WQM 7.0 Ver. 1.1
Total Residual Chlorine	0.17	Average Monthly	TRC Evaluation Spreadsheet
Total Residual Chlorine	0.58	IMAX	TRC Evaluation Spreadsheet

Comments: In accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits," a seasonal multiplier of "3" will be applied to ammonia nitrogen during the winter period.

Best Professional Judgment (BPJ) Limitations

Comments: Monitoring for total nitrogen will be placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Anti-Backsliding

WQBELs for ammonia nitrogen, dissolved oxygen, and total residual chlorine were relaxed as part of this proposed renewed NPDES Permit. Backsliding of these parameters are permissible under 402(o)(1) of the CWA based on compliance with 303(d)(4)(B) – Attainment Water. Compliance with 303(d)(4)(B) is being met because the receiving stream – an unnamed tributary to Mulligan Run, is attaining its designated use and the backsliding of the effluent limits is consistent with PADEP's antidegradation policy located in 25 Pa. Code Chapter 93.4(a). The revised effluent limits are meeting state antidegradation requirements because instream water uses are being met and state water quality standards for ammonia nitrogen, dissolved oxygen and total residual chlorine in 25 Pa. Code Chapter 93.7 will be achieved, as was demonstrated in the WQM 7.0 Ver. 1.1 Model and the TRC Evaluation Spreadsheet that was done for this permit renewal.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.17	XXX	0.58	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	10.5	XXX	21	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.5	XXX	7.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001 (after disinfection)

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Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34996	Trib 34996 to Mulligan Run	**0.650**	1240.00	1.17	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.043	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.35	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Franklin MHV	PA0102601	0.0280	0.0000	0.0000	0.000	20.00	7.70

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.05	0.00	0.70

X		*Vacant* / Environmental Engineer Manager	Okay to Draft JCD 3/4/2024

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34996	Trib 34996 to Mulligan Run	**0.001**	1115.00	1.68	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.043	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.35	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20C	34996	Trib 34996 to Mulligan Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.650	0.05	0.00	0.05	.0433	0.03648	.357	4.12	11.52	0.06	0.625	20.00	7.48
Q1-10 Flow												
0.650	0.03	0.00	0.03	.0433	0.03648	NA	NA	NA	0.06	0.705	20.00	7.52
Q30-10 Flow												
0.650	0.07	0.00	0.07	.0433	0.03648	NA	NA	NA	0.07	0.566	20.00	7.46

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	34996	Trib 34996 to Mulligan Run

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.650	Franklin MHV	9.01	15.64	9.01	15.64	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.650	Franklin MHV	1.45	3.64	1.45	3.64	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.65	Franklin MHV	25	25	3.64	3.64	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34996	Trib 34996 to Mulligan Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.650	0.028	20.000	7.479
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.117	0.357	11.521	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
12.67	1.302	1.72	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.274	22.950	Owens	6
Reach Travel Time (days)			
0.625			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.063	11.68	1.64	7.51
0.125	10.77	1.57	7.88
0.188	9.93	1.51	8.03
0.250	9.15	1.44	8.12
0.313	8.43	1.38	8.20
0.375	7.78	1.32	8.24
0.438	7.17	1.26	8.24
0.500	6.61	1.21	8.24
0.563	6.09	1.16	8.24
0.625	5.61	1.11	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20C	34996	Trib 34996 to Mulligan Run

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.650	Franklin MHV	PA0102601	0.028	CBOD5	25		
				NH3-N	3.64	7.28	
				Dissolved Oxygen			4

1A	B	C	D	E	F	G
2	**TRC EVALUATION**			Franklin Mobile Home Village		
3	Input appropriate values in B4:B8 and E4:E7					
4	0.05	**= Q stream (cfs)**		**0.5**	**= CV Daily**	
5	0.028	**= Q discharge (MGD)**		**0.5**	**= CV Hourly**	
6	30	**= no. samples**		**1**	**= AFC_Partial Mix Factor**	
7	0.3	**= Chlorine Demand of Stream**		**1**	**= CFC_Partial Mix Factor**	
8	0	**= Chlorine Demand of Discharge**		**15**	**= AFC_Criteria Compliance Time (min)**	
9	**0.5**	**= BAT/BPJ Value**		**720**	**= CFC_Criteria Compliance Time (min)**	
	0	**= % Factor of Safety (FOS)**		**0**	**=Decay Coefficient (K)**	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	**1.3.2.iii**	WLA afc = 0.387		**1.3.2.iii**	WLA cfc = 0.370
12	PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373		**5.1c**	LTAMULT cfc = 0.581
13	PENTOXSD TRG	**5.1b**	LTA_afc= 0.144		**5.1d**	LTA_cfc = 0.215
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	**5.1f**	AML MULT = 1.231			
17	PENTOXSD TRG	**5.1g**	AVG MON LIMIT (mg/l) = 0.178		AFC	
18			INST MAX LIMIT (mg/l) = 0.581			

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**