Anexo MINAM
Observación Nº 90

CEV CONSORCIO
Ecodes Ingeniería - Varichem de Colombia

Calculos del ERSA - Riesgo Ecológico

ECOLOGICAL RISK CALCULATOR v.052102

Date:	9-marzo-2023

Project:	S0120	**Receptor:**	Raton (Microtus sp.)	**COPC:**	Petroleo (F2)

Soil and Water (terrestrial)

	CTV	*90%*			*Diet*		*MDC*	
NOAEL=	2303		WIR=	0	Ppl=	1	EPCw=	0
LOAEL=	23030		FIR=	0.141	Psi=	0	EPCs=	10700
BCFspl	1.5				Psm=	0		
BCFssi	3				Ps=	0.032	*95UCL*	
BCFsm	0						EPCw=	
AUFs=	1		AUFw=	1			EPCs=	107000

	Formula	**SL** (NOAEL, MDC, 90%, MAX)		**RSL** (LOAEL, 95UCL, CTV)	
		dose	% of risk		% of risk
dose (water)=	WIR x EPCw x AUFw	0.00	0.0%	0.00	0.0%
dose (soil)=	FIR x Ps x EPCs x AUFs	48.28	2.1%	482.78	2.1%
dose (plant)=	FIR x Ppl x BCFpl x EPCs x AUFs	2263.05		22630.50	97.9%
dose (soil inv.)=	FIR x Psi x BCFsi x EPCs x AUFs	0.00		0.00	0.0%
dose (small mamm.)=	FIR x Pf x BCFsm x EPCs x AUFs	0.00		0.00	0.0%
	SL Food based dose=	2263.05	97.9%		
	Total Risk=	1.00		1.00	

Wildlife Specific TRV

COPC:	Petroleo (F2)		TRVw=TRVm x (BWt/BWw)exp0.25	2303.372	NOAEL
BW wild.	0.038	kg	Raton (Microtus sp.)		
BW test	550	kg	Vaca (Bos)		
TRVmam	210				

CEV CONSORCIO
Ecodes Ingeniería - Varichem de Colombia

Calculos del ERSA - Riesgo Ecológico

ECOLOGICAL RISK CALCULATOR v.052102 **Date:** 9-marzo-2023

Project:	S0120	**Receptor:**	Raton (Microtus sp.)	**COPC:**	Petroleo (F3)

Soil and Water (terrestrial)

	CTV	*90%*			*Diet*		*MDC*	
NOAEL=	2303		WIR=	0	Ppl=	1	EPCw=	0
LOAEL=	23030		FIR=	0.141	Psi=	0	EPCs=	70500
BCFspl	0.2				Psm=	0		
BCFssi	2.6				Ps=	0.032	*95UCL*	
BCFsm	0						EPCw=	
AUFs=	1		AUFw=	1			EPCs=	705000

NOAEL y LOAEL de valor para vaca (CCME)
Ps= espec'ifico a Microtus
Surrogado PAH peso molecular alto
Surrogado PAH peso molecular alto
No aplica
Se asume presencia 100%

	Formula	**SL** (NOAEL, MDC, 90%, MAX)		**RSL** (LOAEL, 95UCL, CTV)	
		dose	% of risk		% of risk
dose (water)=	WIR x EPCw x AUFw	0.00	0.0%	0.00	0.0%
dose (soil)=	FIR x Ps x EPCs x AUFs	318.10	13.8%	3180.96	13.8%
dose (plant)=	FIR x Ppl x BCFpl x EPCs x AUFs	1988.10		19881.00	86.2%
dose (soil inv.)=	FIR x Psi x BCFsi x EPCs x AUFs	0.00		0.00	0.0%
dose (small mamm.)=	FIR x Pf x BCFsm x EPCs x AUFs	0.00		0.00	0.0%
	SL Food based dose=	1988.10	86.2%		
	Total Risk=	1.00		1.00	

Wildlife Specific TRV

COPC:	etroleo (F3)		TRVw=TRVm x (BWt/BWw)exp0.25	2303.372	NOAEL
BW wild.	0.038	kg	Raton (Microtus sp.)		
BW test	550	kg	Vaca (Bos)		
TRVmam	210				

CEV CONSORCIO
Ecodes Ingeniería - Varichem de Colombia

Calculos del ERSA - Riesgo Ecológico

ECOLOGICAL RISK CALCULATOR v.052102 **Date:** 9-marzo-2023

Project:	S0120	**Receptor:**	Paloma (Zenaida sp.)	**COPC:**	Petroleo (F2)

Soil and Water (terrestrial)

	CTV	*90%*			*Diet*		*MDC*	
NOAEL=	1727		WIR=	0	Ppl=	1	EPCw=	0
LOAEL=	17270		FIR=	0.141	Psi=	0	EPCs=	7700
BCFspl	1.5				Psm=	0		
BCFssi	3				Ps=	0.093	*95UCL*	
BCFsm	0						EPCw=	
AUFs=	1		AUFw=	1			EPCs=	77000

	Formula	**SL** (NOAEL, MDC, 90%, MAX)		**RSL** (LOAEL, 95UCL, CTV)	
		dose	% of risk		% of risk
dose (water)=	WIR x EPCw x AUFw	0.00	0.0%	0.00	0.0%
dose (soil)=	FIR x Ps x EPCs x AUFs	100.97	5.8%	1009.70	5.8%
dose (plant)=	FIR x Ppl x BCFpl x EPCs x AUFs	1628.55		16285.50	94.2%
dose (soil inv.)=	FIR x Psi x BCFsi x EPCs x AUFs	0.00		0.00	0.0%
dose (small mamm.)=	FIR x Pf x BCFsm x EPCs x AUFs	0.00		0.00	0.0%
	SL Food based dose=	1628.55	94.2%		
	Total Risk=	1.00		1.00	

Wildlife Specific TRV

COPC:	etroleo (F2)		TRVw=TRVm x (BWt/BWw)exp0.25	1727.884	NOAEL
BW wild.	0.12	kg	Paloma (Zenaida sp.)		
BW test	550	kg	Vaca (Bos)		
TRVmam	210				

CEV CONSORCIO
Ecodes Ingeniería - Varichem de Colombia

Calculos del ERSA - Riesgo Ecológico

ECOLOGICAL RISK CALCULATOR v.052102 **Date:** 9-marzo-2023

Project:	S0120	**Receptor:**	Paloma (Zenaida sp.)	**COPC:**	Petroleo (F3)

Soil and Water (terrestrial)

	CTV	*90%*			*Diet*		*MDC*	
NOAEL=	1727		WIR=	0	Ppl=	1	EPCw=	0
LOAEL=	17270		FIR=	0.141	Psi=	0	EPCs=	42000
BCFspl	0.2				Psm=	0		
BCFssi	2.6				Ps=	0.093	*95UCL*	
BCFsm	0						EPCw=	
AUFs=	1		AUFw=	1			EPCs=	420000

	Formula	**SL** (NOAEL, MDC, 90%, MAX)		**RSL** (LOAEL, 95UCL, CTV)	
		dose	% of risk		% of risk
dose (water)=	WIR x EPCw x AUFw	0.00	0.0%	0.00	0.0%
dose (soil)=	FIR x Ps x EPCs x AUFs	550.75	31.7%	5507.46	31.7%
dose (plant)=	FIR x Ppl x BCFpl x EPCs x AUFs	1184.40		11844.00	68.3%
dose (soil inv.)=	FIR x Psi x BCFsi x EPCs x AUFs	0.00		0.00	0.0%
dose (small mamm.)=	FIR x Pf x BCFsm x EPCs x AUFs	0.00		0.00	0.0%
	SL Food based dose=	1184.40	68.3%		
	Total Risk=	1.00		1.00	

Wildlife Specific TRV

COPC:	etroleo (F3)		TRVw=TRVm x (BWt/BWw)exp0.25	1727.884	NOAEL
BW wild.	0.12	kg	Paloma (Zenaida sp.)		
BW test	550	kg	Vaca (Bos)		
TRVmam	210				

2.606494	0.14617	1.8757	0.087078
0.268831	0.01462	0.1876	0.008708
0.837082	0.04622	0.5931	0.027536