

Chemical Analysis Report

SO-DIST-2021-08-19-02

Florida Department of Environmental Protection
Central Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

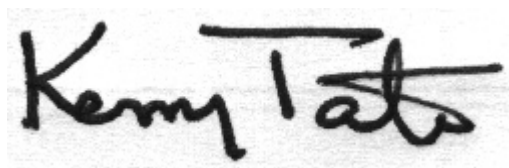
Event Description: **2021 SMP : Collier County**
Request ID: **RQ-2021-08-02-81**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 30-AUG-2021 12:27

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: IMKFSHCK

Collection Date/Time: 08/18/2021 10:08

Field ID: AF65812

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270538	EPA 8276	Chlordane	5.6	U	ng/L	P402612	
		Toxaphene	34	U	ng/L	P402612	
2270539	EPA 8321B	2,4-D	0.0086		ug/L	P402808	
		Acesulfame K	0.10	U	ug/L	P402720	MS
		2,4,5-T	0.0040	U	ug/L	P402808	
		AMPA	0.36	I	ug/L	P402720	
		Acetaminophen	0.0080	U	ug/L	P402808	
		Acetamiprid	0.0020	U	ug/L	P402808	
		Endothall	0.25	U	ug/L	P402720	MS
		Glufosinate	0.10	U	ug/L	P402720	
		Glyphosate	0.33	I	ug/L	P402720	
		Afidopyropen	0.0020	U	ug/L	P402808	
		Bentazon	8.0E-04	U	ug/L	P402808	
		Sucralose	0.064		ug/L	P402720	
		Benzovindiflupyr	0.0020	U	ug/L	P402808	
		Carbamazepine	8.0E-04	U	ug/L	P402808	
		Clothianidin	0.0091		ug/L	P402808	
		Dinotefuran	0.0022	I	ug/L	P402808	
		Diuron	0.0020	U	ug/L	P402808	
		Fenuron	0.016	U	ug/L	P402808	
		Fluridone	8.0E-04	U	ug/L	P402808	
		Imazapyr	0.11		ug/L	P402808	MS
		Hydrocodone	0.0020	U	ug/L	P402808	
		Ibuprofen	0.020	U	ug/L	P402808	
		Imidacloprid	0.022		ug/L	P402808	MS
		Linuron	0.0040	U	ug/L	P402808	
		Mandestrobin	0.0020	U	ug/L	P402808	
		MCPP	0.0020	U	ug/L	P402808	
		Naproxen	0.0080	U	ug/L	P402808	
		Primidone	0.0040	U	ug/L	P402808	
		Pyraclostrobin	0.0020	U	ug/L	P402808	
		Thiamethoxam	0.013		ug/L	P402808	
		Tolfenpyrad	0.0020	U	ug/L	P402808	
		Triclopyr	0.0040	U	ug/L	P402808	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276

Batch ID: P402612

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B

Batch ID: P402720

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P402808

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P402612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.6	78.7	P/P	56 - 117
Toxaphene	67.9	67.1	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P402720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.4		P	40 - 150
AMPA	97.9		P	40 - 160
Endothall	126		P	40 - 150
Glufosinate	104		P	40 - 160
Glyphosate	91.6		P	40 - 160
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.9		P	40 - 150
2,4,5-T	87.1		P	40 - 150
Acetaminophen	75.1		P	30 - 150
Acetamiprid	80.5		P	40 - 150
Afidopyropen	65.6		P	40 - 150
Bentazon	92.0		P	30 - 150
Benzovindiflupyr	78.8		P	40 - 150
Carbamazepine	77.0		P	40 - 150
Clothianidin	74.8		P	40 - 150
Dinotefuran	75.8		P	40 - 150
Diuron	96.1		P	40 - 150
Fenuron	85.3		P	40 - 150
Fluridone	81.8		P	40 - 150
Hydrocodone	77.3		P	40 - 150
Ibuprofen	71.7		P	40 - 150
Imazapyr	91.6		P	40 - 150
Imidacloprid	85.0		P	40 - 150
Linuron	79.4		P	40 - 150
Mandestrobin	77.6		P	40 - 150
MCPP	87.3		P	40 - 150
Naproxen	58.1		P	40 - 150
Primidone	87.9		P	40 - 150
Pyraclostrobin	66.5		P	40 - 150
Thiamethoxam	78.0		P	40 - 150
Tolfenpyrad	35.0		P	30 - 150
Triclopyr	76.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P402612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270340	Chlordane	90.7	82.1	P/P	47 - 128
2270340	Toxaphene	72.9	69.9	P/P	11 - 163

Reference Method: EPA 8321B
Batch ID: P402720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	Acesulfame K	154	134	F/P	40 - 150
2270486	AMPA	83.5	84.6	P/P	40 - 160
2270486	Endothall	155	154	F/F	40 - 150
2270486	Glufosinate	84.2	82.7	P/P	40 - 160
2270486	Glyphosate	81.2	82.2	P/P	40 - 160
2270486	Sucralose	112	110	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	2,4-D	107	104	P/P	40 - 150
2270486	2,4,5-T	100	99.1	P/P	40 - 150
2270486	Acetaminophen	85.7	86.3	P/P	30 - 150
2270486	Acetamiprid	94.1	94.9	P/P	40 - 150
2270486	Afidopyropen	80.2	67.1	P/P	40 - 150
2270486	Benzovindiflupyr	80.8	89.7	P/P	40 - 150
2270486	Carbamazepine	89.4	96.8	P/P	40 - 150
2270486	Clothianidin	114	102	P/P	40 - 150
2270486	Dinotefuran	101	108	P/P	40 - 150
2270486	Diuron	78.5	74.7	P/P	40 - 150
2270486	Fenuron	88.6	88.4	P/P	40 - 150
2270486	Fluridone	84.1	85.0	P/P	40 - 150
2270486	Hydrocodone	89.9	88.8	P/P	40 - 150
2270486	Ibuprofen	84.5	70.1	P/P	40 - 150
2270486	Imazapyr	157	133	F/P	40 - 150
2270486	Imidacloprid	142	151	P/F	40 - 150
2270486	Linuron	76.2	85.8	P/P	40 - 150
2270486	Mandestrobin	83.6	84.6	P/P	40 - 150
2270486	MCPP	101	104	P/P	40 - 150
2270486	Naproxen	76.5	80.5	P/P	40 - 150
2270486	Primidone	92.5	91.2	P/P	40 - 150
2270486	Pyraclostrobin	77.8	81.9	P/P	40 - 150
2270486	Thiamethoxam	127	127	P/P	40 - 150
2270486	Tolfenpyrad	50.0	55.1	P/P	30 - 150
2270486	Triclopyr	86.8	92.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P402612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270340	Chlordane	9.86	Spike	P	0 - 30
2270340	Toxaphene	4.18	Spike	P	0 - 30
LFB	Chlordane	6.04	LCS	P	0 - 30
LFB	Toxaphene	1.19	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	Acesulfame K	13.1	Spike	P	0 - 30
2270486	AMPA	1.20	Spike	P	0 - 30
2270486	Endothall	0.531	Spike	P	0 - 30
2270486	Glufosinate	1.84	Spike	P	0 - 30
2270486	Glyphosate	1.21	Spike	P	0 - 30
2270486	Sucralose	1.31	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	2,4-D	2.53	Spike	P	0 - 30
2270486	2,4,5-T	1.19	Spike	P	0 - 30
2270486	Acetaminophen	0.572	Spike	P	0 - 30
2270486	Acetamiprid	0.839	Spike	P	0 - 30
2270486	Afidopyropen	17.7	Spike	P	0 - 30
2270486	Bentazon	4.63	Spike	P	0 - 30
2270486	Benzovindiflupyr	10.4	Spike	P	0 - 30
2270486	Carbamazepine	7.90	Spike	P	0 - 30
2270486	Clothianidin	10.7	Spike	P	0 - 30
2270486	Dinotefuran	5.97	Spike	P	0 - 30
2270486	Diuron	4.62	Spike	P	0 - 30
2270486	Fenuron	0.216	Spike	P	0 - 30
2270486	Fluridone	1.02	Spike	P	0 - 30
2270486	Hydrocodone	1.23	Spike	P	0 - 30
2270486	Ibuprofen	18.7	Spike	P	0 - 30
2270486	Imazapyr	11.1	Spike	P	0 - 30
2270486	Imidacloprid	4.03	Spike	P	0 - 30
2270486	Linuron	11.8	Spike	P	0 - 30
2270486	Mandestrobin	1.20	Spike	P	0 - 30
2270486	MCPP	2.30	Spike	P	0 - 30
2270486	Naproxen	5.06	Spike	P	0 - 30
2270486	Primidone	1.46	Spike	P	0 - 30
2270486	Pyraclostrobin	5.05	Spike	P	0 - 30
2270486	Thiamethoxam	0.0550	Spike	P	0 - 30
2270486	Tolfenpyrad	9.75	Spike	P	0 - 30
2270486	Triclopyr	6.74	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2270538
Field Sample ID: AF65812

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	81.7	P	29 - 92.0
EPA 8276	PCNB	75.6	P	43 - 134

Lab Sample ID: 2270539
Field Sample ID: AF65812

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.6	P	30 - 160
EPA 8321B	Diuron-d6	59.2	P	30 - 160
EPA 8321B	Endothall-d6	86.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	90.8	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A107353
Included Lab Sample IDs: 2270539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	109	P/P	60 - 160
Glufosinate	105	108	P/P	60 - 160
Glyphosate	96.2	105	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A107377
Included Lab Sample IDs: 2270539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.2	83.4	P/P	60 - 160
Endothall	131	140	P/P	60 - 160
Sucralose	103	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A107460
Included Lab Sample IDs: 2270539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	90.6	P/P	50 - 150
2,4,5-T	99.0	98.2	P/P	50 - 150
Acetaminophen	97.3	95.0	P/P	60 - 160
Acetamiprid	108	96.5	P/P	50 - 150
Afidopyropen	97.6	95.4	P/P	50 - 150
Bentazon	116	112	P/P	50 - 160
Benzovindiflupyr	114	104	P/P	50 - 150
Carbamazepine	107	109	P/P	60 - 150
Clothianidin	84.9	99.2	P/P	60 - 150
Dinotefuran	103	94.8	P/P	50 - 150
Diuron	125	126	P/P	60 - 160
Fenuron	100	100	P/P	60 - 150
Fluridone	107	106	P/P	60 - 160
Hydrocodone	97.0	103	P/P	60 - 150
Ibuprofen	84.7	75.6	P/P	50 - 160
Imazapyr	117	122	P/P	50 - 150
Imidacloprid	99.2	98.7	P/P	60 - 150
Linuron	101	108	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	96.4	96.2	P/P	50 - 150
Naproxen	73.5	128	P/P	50 - 160
Primidone	107	119	P/P	60 - 150
Pyraclostrobin	109	103	P/P	60 - 150
Thiamethoxam	97.8	104	P/P	50 - 150
Tolfenpyrad	101	99.0	P/P	60 - 150
Triclopyr	102	104	P/P	50 - 150

Reference Method: EPA 8276
Run ID: A107479
Included Lab Sample IDs: 2270538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.1		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A107479
Included Lab Sample IDs: 2270538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Toxaphene	106		P	80 - 120

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8276	Chlordane	83.6	78.7	90.7	82.1	6.04		9.86
	Toxaphene	67.9	67.1	72.9	69.9	1.19		4.18
EPA 8321B	2,4-D	82.9		107	104			2.53
	2,4,5-T	87.1		100	99.1			1.19
	Acesulfame K	87.4		154	134			13.1
	Acetaminophen	75.1		85.7	86.3			0.572
	Acetamiprid	80.5		94.1	94.9			0.839
	Afidopyropen	65.6		80.2	67.1			17.7
	AMPA	97.9		83.5	84.6			1.20
	Bentazon	92.0						4.63
	Benzovindiflupyr	78.8		80.8	89.7			10.4
	Carbamazepine	77.0		89.4	96.8			7.90
	Clothianidin	74.8		114	102			10.7
	Dinotefuran	75.8		101	108			5.97
	Diuron	96.1		78.5	74.7			4.62
	Endothall	126		155	154			0.531
	Fenuron	85.3		88.6	88.4			0.216
	Fluridone	81.8		84.1	85.0			1.02
	Glufosinate	104		84.2	82.7			1.84
	Glyphosate	91.6		81.2	82.2			1.21
	Hydrocodone	77.3		89.9	88.8			1.23
	Ibuprofen	71.7		84.5	70.1			18.7
	Imazapyr	91.6		157	133			11.1
	Imidacloprid	85.0		142	151			4.03
	Linuron	79.4		76.2	85.8			11.8
	Mandestrobin	77.6		83.6	84.6			1.20
	MCCP	87.3		101	104			2.30
	Naproxen	58.1		76.5	80.5			5.06
	Primidone	87.9		92.5	91.2			1.46
	Pyraclostrobin	66.5		77.8	81.9			5.05
	Sucralose	106		112	110			1.31
	Thiamethoxam	78.0		127	127			0.0550
	Tolfenpyrad	35.0		50.0	55.1			9.75
	Triclopyr	76.0		86.8	92.8			6.74

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2270538
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2270539

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8276	08/19/2021	08/20/2021 08:00	Fe-Val Siddell	08/25/2021 12:57	Michael Poppell	2270538
EPA 8321B	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/20/2021 11:22	Juyoung Kim	2270539
	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/20/2021 20:49	Pramila Ghimire	2270539
	08/19/2021	08/24/2021 09:00	Hoor Shaik	08/25/2021 10:22	Juyoung Kim	2270539