

**CONDUCTING VAPOR EXTRACTION TEST
AT TONY'S EXPRESS AUTO SERVICE
3609 INTERNATIONAL BOULEVARD
OAKLAND, CALIFORNIA**

2337

Project 2332

November 9, 1999

Prepared for

**Tony's Express Auto Service
3609 International Boulevard
Oakland, California**

Prepared by

**SOMA Environmental Engineering, Inc.
2680 Bishop Drive, Suite 203
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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the owner of the Tony's Express Auto Service, located at 3609 International Boulevard, Oakland, California, see Figure-1.

The recent investigation by SOMA was conducted based on the approved Workplan by the Alameda County Environmental Health Services (ACEHS). The objective of SOMA's recent investigation was to install a groundwater and soil remediation system to remove petroleum chemicals from the soil and groundwater. In October 1999, a groundwater remediation system was installed, and currently SOMA is in the process of acquiring effluent discharge permit from the East Bay Municipal Utility District (EBMUD) before starting the full operation of the groundwater treatment system.

Per our Corrective Action Plan (CAP) report (SOMA, July, 1999) the air sparging in combination with pump-and-treat was found to be the most feasible, effective and cost saving alternative for remediation of on-site soils and groundwater ~~system~~. In 1993, Soil Tech Engineering, Inc. (STE) installed four 6-inch diameter vapor extraction probes following the soil and groundwater investigation activities. In addition, two horizontal perforated pipes were installed at four feet depth in the fuel island area for soil remediation purposes. All the vapor wells and collector probes were piped and brought to the Christy Box in front of shop for the purpose of future hook-up and conducting a feasibility study. Figure-2 shows the location of soil vapor extraction wells and the horizontal perforated pipes.

1.1 Site Physical Setting

The Site is relatively flat and located at the southeast corner of International

Boulevard and 36th Street, see Figure 2. The Site is bound by International Boulevard to the north, 36th Street to the west, the Las Bougainvilleas (LB) residential facility, 12th Street and BART Station parking lot to the south.

Currently, the Site and the surrounding land are zoned for a neighborhood center mixed use and mixed housing type residential purposes. The Site is expected to remain for the neighborhood center mixed use in the future. Immediately down-gradient from the Site, the LB residential facility is located.

2.0 SCOPE OF WORK

The primary objective of this investigation was to evaluate:

1. Whether or not the existing vapor extraction wells installed by STE could be used for air sparging purposes;
2. The radius of influence of each vapor extraction well and predict the total air flow rate that can be extracted from the vadose zone in order to effectively remove the petroleum chemicals from the impacted soil and groundwater;
3. The intrinsic permeability of the vadose zone in order to determine, if the existing vapor extraction wells are sufficient for remediation of the entire Site;
4. Finally, to evaluate the mass removal rate of contaminants from the Site.

3.0 FIELD INVESTIGATION

On October 21, a field visit was conducted to inspect the location of the existing vapor extraction wells and the Christy Box installed by STE. Upon our inspection it was found that some of the pipes inside the Christy Box have not been properly labeled. For instance, three out of six pipes inside the Christy Box had no labels and it was not clear which vapor well they represent. On October 25, 1999,

SOMA hired Cruz Brothers of San Jose to assist in locating, identification and labeling of pipes inside the Christy Box by using magnetometer tests.

On October 26, 1999, SOMA hired Stealth Industrial, Inc. (Stealth) to conduct a vapor extraction test at the Site. Based on SOMA's instruction, Stealth applied vacuum suction on each vapor well and monitored pressure drop on the other vapor wells and horizontal probes. During this process the flow rate out each pumping well was monitored. A photo ionization detector (PID) was used to make a screening level of vapor concentration evaluation at five-minute time intervals during the test. Based on PID readings, four vapor samples using a ^{Test for?} toddler bag were collected. The samples were sent to Delta Environmental Laboratories of Benicia, California for analysis. Appendix B presents laboratory reports and chain of custody form. Figure-2 shows the location of the four existing vapor extraction wells (P1-P4) and the two horizontal pipes (ISL-1 and ISL-2)

During the vapor extraction testing period a severe upwelling condition was observed. Due to upwelling conditions, which caused an abrupt rise of groundwater levels, vapor testing could not be performed on P-3 and ISL-1, See Table-1.

4.0 DATA ANALYSIS AND MODELING

The data gathered during the soil vapor extraction testing was used to estimate the intrinsic permeability of the vadose zone beneath the Site. The equation and a chart presented in Appendix A were used to evaluate the intrinsic permeability of the vadose zone. Based on our calculations, the intrinsic permeability of the vadose zone varied between 7-10 darcy. Table-1 shows the raw data gathered during the soil vapor extraction testing.

In order to determine the number of required vapor extraction wells for complete coverage of the Site under negative pressure and evaluate the total volume of air-flow per unit time (air flow rate) under a different vapor extraction scheme, gas flow modeling was conducted. In conducting vapor flow modeling, a three-dimensional vapor flow model of GAS-3D (Sepehr and Samani, 1993) was utilized. The model takes into account the effect of partial penetration and partial screening of vapor extraction wells as well as non-homogeneity and anisotropy of the soil.

Gas-3D is a finite difference model, which can be run under steady state or transient conditions. The input data includes soil intrinsic permeability, porosity, and moisture content. Appendix B includes the model input and output files.

4.1 Model Calibration

The field data gathered during the vapor extraction testing were used to calibrate the model. By adjusting the intrinsic permeability and the moisture content of vadose zone the model was calibrated. For model calibration, each vapor extraction well was pumped under a steady state condition for the duration of test. The simulated pressures inside the observation wells were compared with the actual measured pressures inside the Christy Box at the same wells during the field test. Table-2 shows the difference between the measured and simulated pressure at different observation wells.

4.2 Model Simulations

After model calibration, a series of simulation runs were conducted in order to estimate the number of required vapor extraction wells for covering the entire Site under reasonable vacuum/negative pressure. The results of these

simulations were used to estimate the total vapor flow rate from the future vapor extraction wells. The estimated total flow rate along with actual petroleum chemical concentrations in extracted vapor will help to design a treatment system and evaluate the mass removal rate from soil and groundwater using the air sparging system.

5.0 RESULTS AND CONCLUSIONS

The results of the field investigation indicated that an air sparging system is a feasible alternative for an effective removal of contaminants from soil and groundwater under present conditions. However, during the pilot testing it was found that upwelling phenomenon would interfere with the vapor extraction process if the existing vapor extraction wells are used. The existing monitoring wells are 15 feet deep, and due to the fact that they have been completed in a saturated zone, these wells are not suitable for vapor extraction purposes. According to the third quarter 1999, groundwater monitoring event conducted on August 23, 1999 depth to groundwater varies between 11.6 and 13.90 feet below the ground surface. Considering the fact that the depth to groundwater will be consistently less than fifteen feet (depth of existing vapor extraction wells), then the existing wells do not seem to be suitable for vapor extraction purposes. This is especially true during the wet months when the depth to groundwater is generally about 10 feet below the ground surface. It is recommended that the existing vadose zone wells be replaced by shallower wells with an approximate depth of 8-9 feet in order to avoid the upwelling phenomenon.

Table-3 shows the results of laboratory analysis on vapor samples collected from the existing vapor extraction wells during the field investigation. As the data indicates up to 98,000 microgram per liter ($\mu\text{g/l}$) of TPH-g was detected in the

vapor samples. In addition, significant levels of benzene (up to 1,600 µg/l) and MTBE (up to 840 µg/l) were detected in the vapor samples.

Assuming that the actual concentration of chemicals in the soil gas after a short while drops two orders of magnitude from the initial levels and the total flow rate be conservatively 50 cubic feet per minutes, then the total mass removal rate will be about 1,000 gram ^{~ 2 lbs} per day. This is based on the assumption that the concentration of TPG-g in the soil gas is 0.4 mg/l.

The results of vapor pilot testing indicated that intrinsic permeability of the vadose zone ranges between 7 and 10 darcy, which is a representative of fine to coarse sandy material. Using the estimated intrinsic permeability values as the input data, GAS-3D model was calibrated using the recorded negative pressures at the observation wells. The calibration was conducted by adjusting the intrinsic permeability and moisture content of the vadose zone. The final adjusted intrinsic permeability of the vadose zone, which caused a better agreement of the recorded pressure values in the field with that of simulated ones ranged between 10.5 and 12 darcy.

The simulated values indicated that by extracting 71 cubic feet per minute from the new recommended vadose wells, a good captured zone would be maintained to effectively remove petroleum hydrocarbons from soil and groundwater. Figure-3 shows the simulated pressure contour lines around vapor extraction system. Table-3 shows the imposed vapor flow rates from each vapor extraction well and ISL-2 trench.

6.0 REFERENCES

Sepehr, M., Samani, Z. 1993., In Situ SOIL Remediation Using Vapor Extraction Wells, Development and Testing of a Three-Dimensional Finite-Difference Model. May-June 1993, Volume 31, Number 3 Issue of Ground Water.

Soil Tech Engineering, Inc. November 1993, Interim Corrective Action & Preliminary Soil and Groundwater Investigation for Tony's Express Service Station, Located at 3609 East 14th Street, Oakland, California.



FIGURES

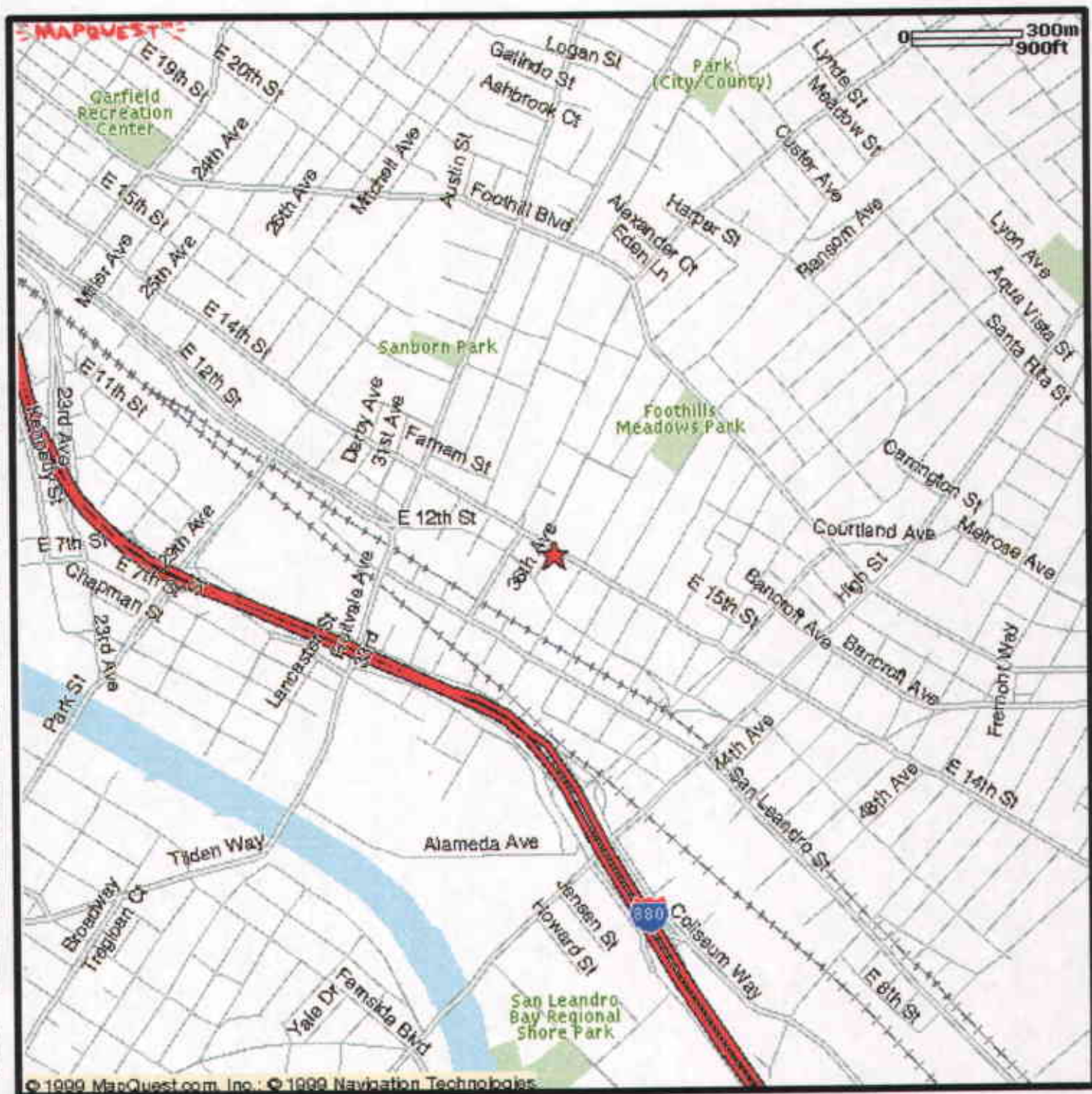


Figure 1: Site Location Map

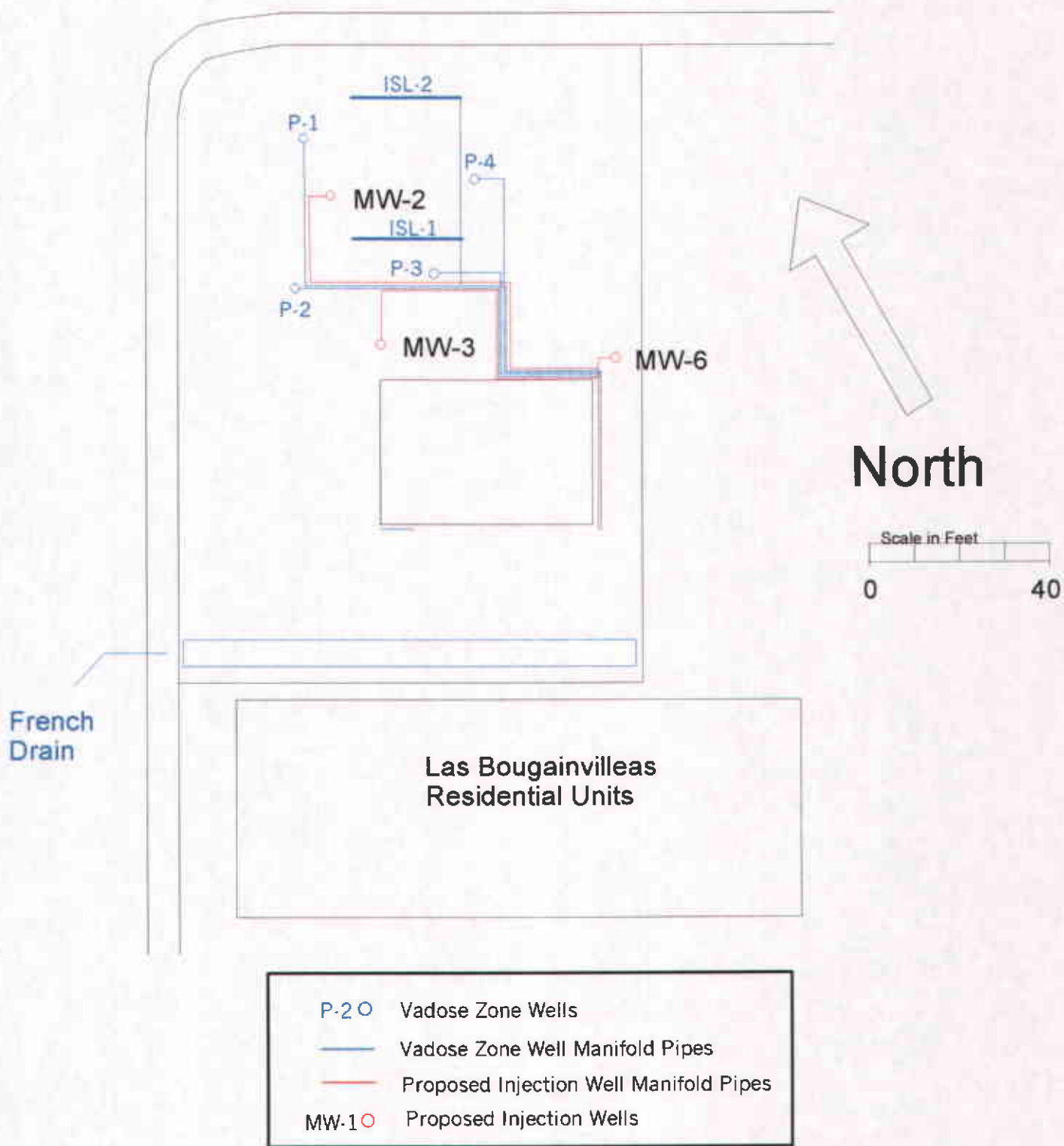
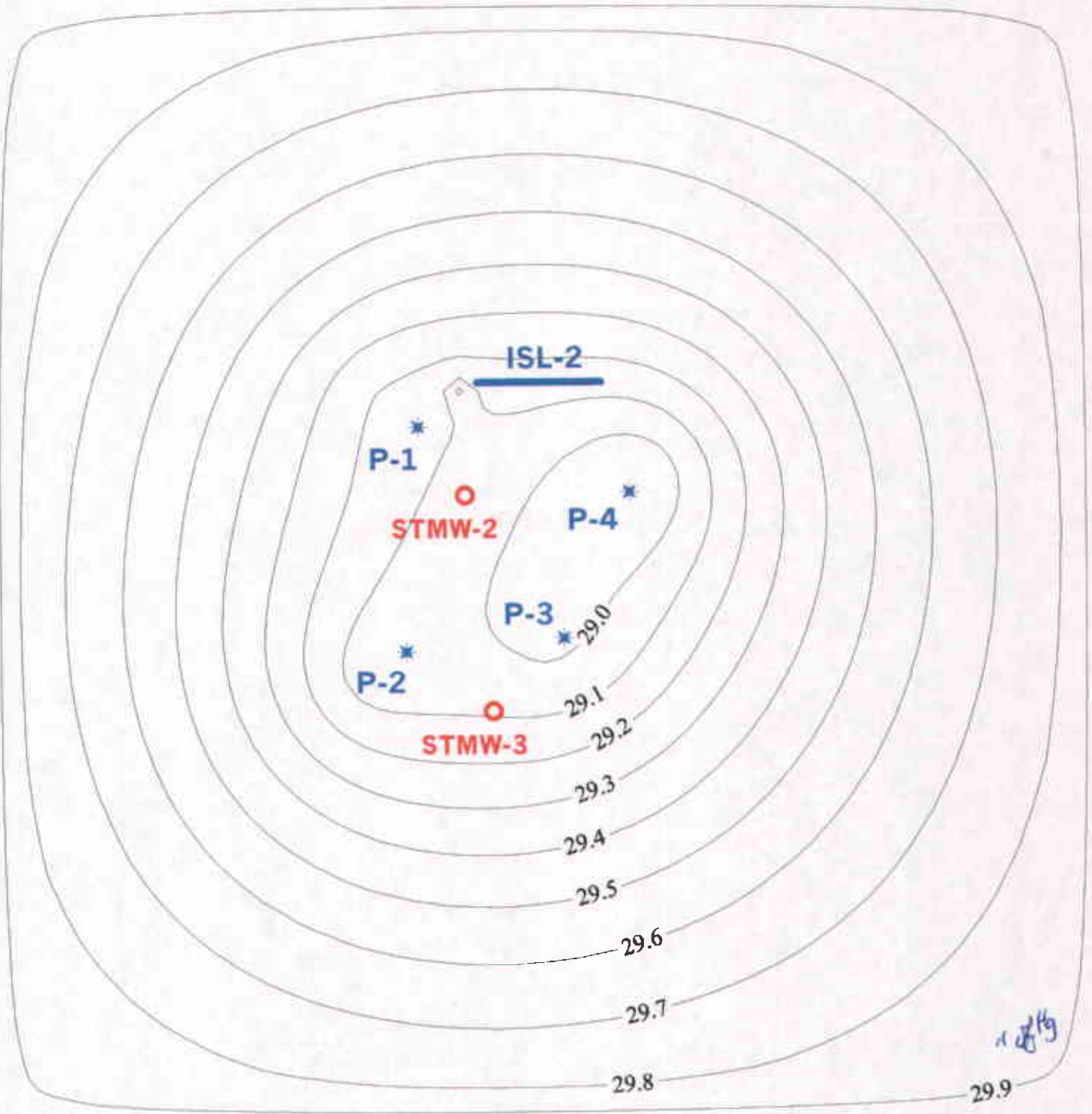


Figure 2: Location of Vapor Extraction Wells



*1.8 ft
29.94 atm press*

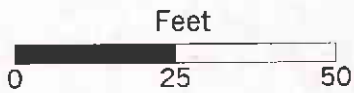


Figure 3: Simulated Pressure Contours around Vapor Extraction Wells
Under 71 CFM Vapor Flow Rates

TABLES

Table-1
Result of Vapor Extraction Pilot Test
Tony's Express Auto Service
Oakland California

Well	Time	Vacuum App Inches H2O	Air flow CFM	Temp °F	PID PPM	Sampled	Suction in the Other Wells				Inches H2O	
							P1	P2	P3	P4	MW1	MW2
P1	9:40	Start										
	9:45	112	7.60	63.2	180			0.41	0.01	0.42	0.00	0.30
	9:50	112	8.50	64.0	191			0.51	0.02	0.47	0.00	0.34
	9:55	112	8.70	64.2	253			0.48	0.02	0.60	0.00	0.37
	10:00	112	9.05	64.6	258			0.60	0.02	0.60	0.01	0.40
	10:05	135	11.00	64.8	265			0.79	0.02	0.72	0.01	0.48
	10:10	135	11.50	65.2	297	P1-1		0.82	0.02	0.74	0.01	0.50
	10:15	135	12.00	65.3	314			0.84	0.02	0.66	0.01	0.52
	10:20	135	11.90	65.0	323			0.84	0.06	0.78	0.02	0.52
	10:25	135	12.00	65.0	260			0.88	0.06	0.78	0.02	0.54
	10:35	135	12.70	65.3	182			0.86	0.04	0.78	0.02	0.54
	10:45	135	12.80	65.4	190			0.90	0.04	0.80	0.02	0.56
P2	11:05	Start										
	11:10	135	31.7	67.3	124		2.00		0.01	3.80	0.04	1.00
	11:15	130	28.3	67.5	126		2.00		0.01	3.80	0.04	1.00
	11:20	130	27.3	68.0	143		2.00		0.01	3.80	0.04	0.95
	11:25	130	25.7	68.2	158		1.80		0.01	3.70	0.04	0.95
	11:30	130	25.2	68.1	184		1.70		0.01	3.50	0.04	0.90
	11:35	130	23.7	68.0	222		1.65		0.01	3.40	0.04	0.80
	11:40	130	22.8	68.5	334		1.50		0.01	3.20	0.04	0.80
	11:50	130	21.9	68.0	>2000	P2-1	1.50		0.01	3.00	0.04	0.75
	11:55	130	20.9	67.8	>2000		1.40		0.01	2.70	0.04	0.70
	12:00	130	20.0	67.0	>2000		1.40		0.01	2.70	0.04	0.70
	12:05	130	19.4	67.7	>2000		1.40		0.01	2.50	0.04	0.65
P3	12:20	Start										
		130	>200									
BobCat started to pump water												

Table-1
Result of Vapor Extraction Pilot Test
Tony's Express Auto Service
Oakland California

Well	Time	Vacuum App Inches H2O	Air flow CFM	Temp °F	PID PPM	Sampled	Suction in the Other Wells				Inches H2O	
							P1	P2	P3	P4	AW1	AW2
P4	1:45	Start										
	1:50	110	22.3	68.8	463		1.0	2.3	0		0.07	0.75
	1:55	110	23.5	68.8	721		1.0	2.3	0		0.07	0.80
	2:00	110	22.9	68.2	724		1.0	2.3	0		0.07	0.80
	2:10	110	21.9	67.5	902		1.0	2.3	0		0.07	0.90
	2:20	110	21.7	68.1	1150		1.0	2.3	0		0.07	1.00
	2:30	110	21.5	67.7	1080		1.0	2.3	0		0.07	1.10
	2:45	115	21.6	67.5	1365		1.0	2.3	0		0.07	1.25
	3:00	120	22.3	67.7	1300	P4-1	1.0	2.3	0		0.07	1.45
BobCat started to pump water												
Vaccum dropped to 5 inches of water the flow rate dropped to few CFM but no suction in the other wells												
ISL-2	12:30	Start										
	12:40	130	19.7	65.9	>2000		0.65	0.56	0.01	2.0	0.03	
	12:50	130	15.6	66.1	>2000		0.60	0.52	0.01	1.8	0.03	
	1:00	130	16.3	66.0	>2000		0.60	0.56	0.01	2.0	0.03	
	1:10	130	15.5	67.0	>2000		0.60	0.54	0.01	1.9	0.03	
	1:20	130	15.0	66.6	>2000		0.50	0.5	0.01	1.6	0.03	
	1:35	130	13.2	68.5	>2000	ISL-2	0.50	0.5	0.01	1.6	0.03	
Instruments Used During The Test												
Vaccum System												
Bobcat Manufactured By: STEALTH INDUSTRIAL INC. Model BC 250 Serial #00480 Max Flow 200 CFM												
PID												
MiniRAE Plus Manufactured By: RAE SYSTEMS INC.												

Table-2
Difference Between Measured and Simulated
Pressure Different Vadose Zone Wells
Tony's Express Auto Service

Well Name	Pumping Well	Measured Pressure in/Hg	Simulated Pressure in/Hg	Difference in in/Hg
P-1	P-2	29.83	29.671	-0.159
P-4		29.72	29.702	-0.018
P-2	P-1	29.87	29.813	-0.057
P-4		29.88	29.81	-0.07
ISL-2		29.93	29.659	-0.271
ISL-1		29.9	29.783	-0.117
P-2	P-4	29.77	29.753	-0.017
P-1		29.87	29.714	-0.156
ISL-2		29.84	29.635	-0.205
ISL-1		29.92	29.65	-0.27

Table-3
Analytical Results on Soil Gas Samples
Tony's Express Auto Services

Analyte	Detection Limit (ug/l)	Results (ug/l)			
		Samples ID			
		P-1	P-2	P-4	ISL-2
Benzene	13	1,000	420	1,600	1,300
Toluene	15	370	110	730	790
Ethylbenzene	18	460	98	130	350
Total Xylenes	18	1,400	190	730	970
MTBE	15	500	280	780	840
TPH-g	420	62,000	38,000	84,000	98,000
C2-C4	180	650	1,600	1,600	3,200

Table-4
Imposed Flow Rates From Each Vapor
Well at Tony's Express Auto Service
Oakland, California

Well Name	Pumping Rate Cubic Feet Per Minute
P-1	11
P-2	15
P-3	14
P-4	21
ISL-2	10

APPENDIX A

Equation and Chart Used To Estimate Soil Intrinsic Permeability

Table E1 : Equations for Permeability and Radius of Influence

$$K = \left(\frac{Q}{H} \times 15.5 \frac{\text{cm}^2/\text{s}}{\text{ft}^2/\text{min}} \right) \times \left(\mu \frac{1}{\pi} \right) \times \left[\ln \left(\frac{R_{pw}}{R_{ow}} \right) \right]$$

$$\times \left[\frac{1}{\frac{P_{atm} - P_{pw}}{P_{atm}} \times 1.013 \times 10^6 \frac{\text{gm}}{\text{cm}/\text{s}^2}} \right] \times \left[\frac{1}{1 - \left(\frac{P_{atm} - P_{ow}}{P_{atm} - P_{pw}} \right)^2} \right]$$

- where
- K = permeability (cm²)
 - Q = flow rate (cfm)
 - H = length of sediment interval (ft)
 - μ = vapor viscosity (gm/cm-s).
 - R_{pw} = radius of pumping well (ft)
 - R_{ow} = distance between pumping well and observation well (ft)
 - P_{atm} = atmospheric pressure (406.8 inches of water)
 - P_{ow} = vacuum drawdown pressure in observation well (inches of water)
 - P_{pw} = vacuum drawdown pressure in pumping well (inches of water)

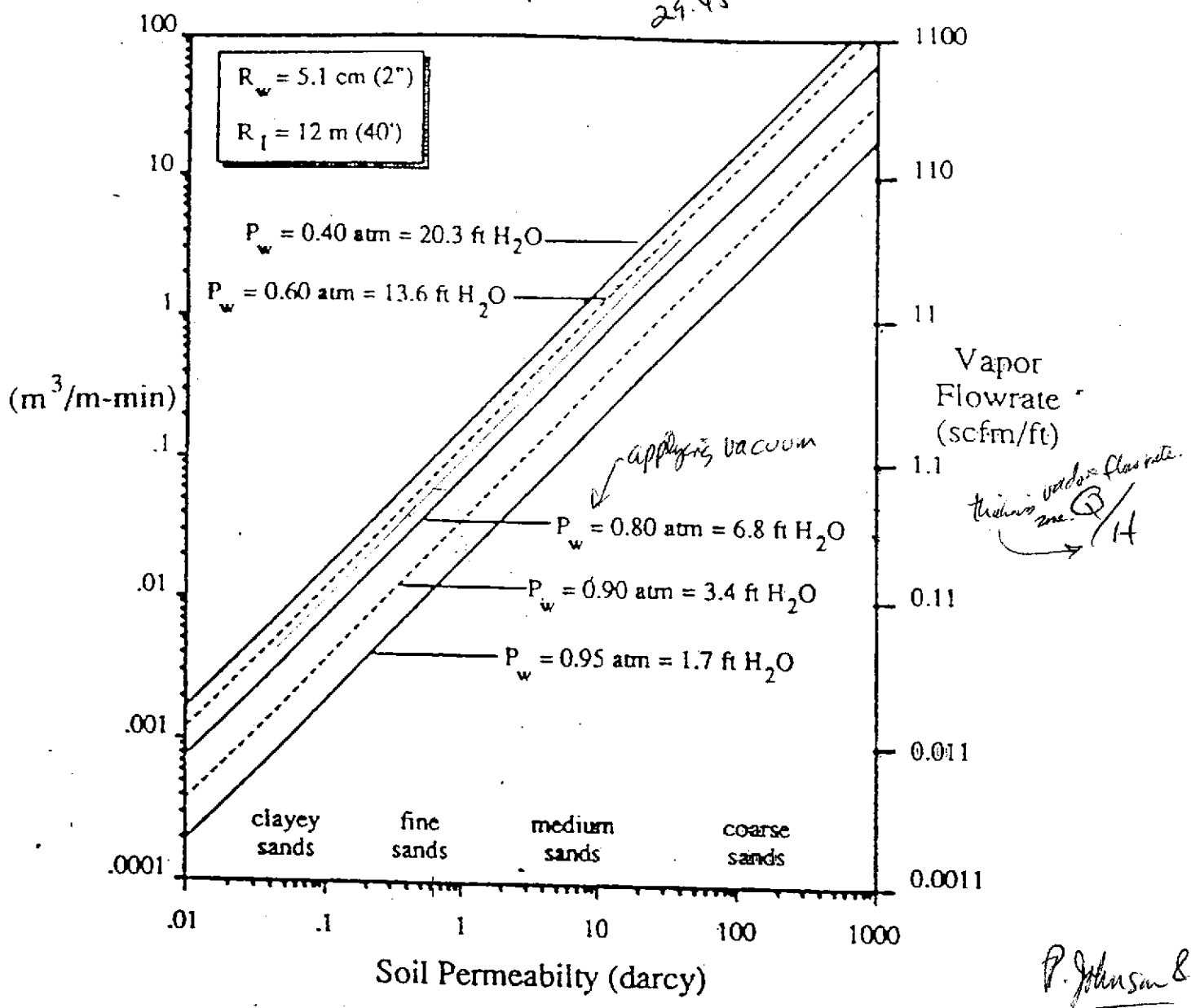
$$\ln R_1 = \ln R_{pw} - \left(\ln \frac{R_{pw}}{R_{ow}} \right) \left(\frac{1 - \left(\frac{P_{atm}}{P_{pw}} \right)^2}{1 - \left(\frac{P_{ow}}{P_{pw}} \right)^2} \right)$$

- where R_1 = radius of influence (radius at which pressure is atmospheric) (ft)

Assumptions:

Steady State Conditions,
Horizontal Flow and
Ideal Gas

29.45 m³/12hr
 $\# \text{ atm} = \frac{20'' \text{ H}_2\text{O}}{13.6} \times 3 \text{ atm}$
 29.45



well radius	radius of influence
$R_w = 5.1 \text{ cm (2 in)}$	$R_l = 7.6 \text{ m (25 ft)}$ -Multiply Q/H by 1.09
$R_w = 5.1 \text{ cm (2 in)}$	$R_l = 23 \text{ m (75 ft)}$ -Multiply Q/H by 0.90
$R_w = 7.6 \text{ cm (3 in)}$	$R_l = 12 \text{ m (40 ft)}$ -Multiply Q/H by 1.08
$R_w = 10 \text{ cm (4 in)}$	$R_l = 12 \text{ m (40 ft)}$ -Multiply Q/H by 1.15
$R_w = 10 \text{ cm (4 in)}$	$R_l = 7.6 \text{ m (25 ft)}$ -Multiply Q/H by 1.27

APPENDIX B

Laboratory Reports and Chain of Custody Form



WATER • WASTE WATER • HAZARDOUS WASTE • FUEL • AIR • SOIL

ENVIRONMENTAL LABORATORIES, Ltd

SOMA
 Environmental Engineering
 2680 Bishop Dr. Suite #203
 San Ramon, CA 94583

Client Project ID:
 Tony's Express
 Oakland
 2332

Ref.: R3921400
 Method: T03/GC/FID/FID
 Sampled: 10/26/99
 Received: 10/27/99
 Matrix: Gas/Tedlar Bag
 Analyzed: 10/30/99
 Reported: 11/5/99
 Units: ug/L

Attention: Dr. M. Sepahr

Laboratory Results for TPH + BTEX and MTBE Analysis

Analyte	Detection Limit	Results			
		Sample ID			
		P1-1	P2-1	P4-1	ISL-2
	ug/L				
BTEX					
Benzene *	13	1000	420	1600	1300
Toluene	15	370	110	730	790
Ethylbenzene	18	460	98	130	350
Total-Xylene	18	1400	190	730	970
MTBE	15	500	280	780	840
TPH(C5+ ref. Gasoline)	420	62000	38000	84000	98000
C2-C4 hydrocarbon	180	650	1600	1600	3200
Surrogate					
Fluorobenzene FID	%	147	129	127	150
Fluorobenzene FID	%	146	123	123	140

* The reported values may be biased due to apparent matrix interferences

ND:Not Detected(<MDL)

Delta Environmental Laboratories

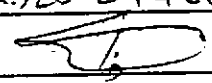
Hossein Khosh Khoo, Ph.D.

Chain of Custody (COC) Form

685 Stone Road #11 & 12

Benicia, Ca. 94510

(707) 747-6081, 800-747-6082 FAX (707) 747-6082

Results to: SOMA
Client Name
Address
City
Telephone 925 244 6600 Fax: 925 244 6601
SAMPLER (signature) Naser Pakrov 
Turnaround Time Standard

Project Name **Tony's Express**

3609 Linn Blvd

LAB ID **Oakland**

Ref # **Proj 2332**

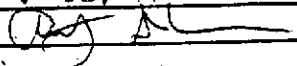
Analysis Requested

No. of containers																				
pH																				
Temperature																				

4491

Special Instructions:

#	Sample ID	Date	Time	Matrix																	Comments
1	P1-1	10/26	10:10	Air																	8020
2	P2-1	10/26	11:50	Air																	8030/CCFID
3	P4-1	10/26	13:00	Air																	MTBE 8020
4	ESI-2	10/26	11:35	Air																	

Relinquished by: Naser Pakrov	Date 10/27/99
Received By: 	Date 10/27/99
Relinquished by:	Date
Received By:	Date

- 1) Have all samples received been stored on ice? **Yes**
- 2) Did any VOA samples received have any head space? **NA**
- 3) Were samples in appropriate containers and packaged properly? **Yes**
- 4) Were samples received in good condition? **Yes**

For Lab Use Only:

APPENDIX C

GAS-3D Input and Output Files

GAS-3D INPUT FILE

11/09/99 10:38 am
68 68 9 1. .05

0.00	10.0	8.00	5.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.00	10.0	8.00	5.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0.00	2.00	2.00	2.00	2.00	2.00	3.00	5.00	8.00	10.00	2.00

0 29.94 (10F10.0) -1

10.5,11.0,11.0,11.0,11.,11.5,11.5,12.0,12.0,12.0

.017,.35,1.0,1.0

.01,1.5,30000

.30,.30,.29,.28,.27,.26,.25,.25,.20,.20

0.05 1.00

981.,287.3,288.

17

40	41	2	-3.0	P-4
40	41	3	-5.0	
40	41	4	-6.0	
40	41	5	-7.0	
45	25	2	-2.0	P-1
45	25	2	-2.0	
45	25	4	-3.0	
45	25	5	-4.0	
28	24	2	-3.0	P-2
28	24	3	-3.0	
28	24	4	-4.0	
28	24	5	-5.0	
29	36	2	-2.0	
29	36	3	-3.0	
29	36	4	-4.0	
29	36	4	-5.0	
45	30	8	-2.0	ISL-2
45	31	8	-2.0	
45	32	8	-2.0	
45	33	8	-2.0	
45	34	8	-2.0	

29.906	29.940	29.940									
29.940	29.940	29.894	29.865	29.848	29.836	29.825	29.813	29.802	29.790	29.779	
29.768	29.757	29.746	29.735	29.724	29.714	29.704	29.695	29.686	29.678	29.670	
29.663	29.656	29.651	29.646	29.641	29.638	29.635	29.633	29.632	29.632	29.632	
29.634	29.635	29.638	29.641	29.645	29.650	29.655	29.661	29.667	29.674	29.681	
29.688	29.696	29.704	29.712	29.721	29.730	29.738	29.747	29.756	29.766	29.775	
29.784	29.793	29.803	29.812	29.821	29.830	29.840	29.849	29.858	29.867	29.881	
29.903	29.940	29.940									
29.940	29.940	29.890	29.859	29.840	29.828	29.816	29.803	29.791	29.778	29.766	
29.754	29.741	29.729	29.718	29.706	29.695	29.684	29.674	29.664	29.655	29.646	
29.638	29.631	29.625	29.619	29.615	29.611	29.608	29.606	29.605	29.605	29.605	
29.607	29.609	29.612	29.615	29.620	29.625	29.631	29.637	29.644	29.651	29.659	
29.667	29.676	29.685	29.694	29.703	29.713	29.722	29.732	29.742	29.752	29.762	
29.772	29.782	29.792	29.802	29.812	29.822	29.832	29.842	29.852	29.862	29.876	
29.901	29.940	29.940									
29.940	29.940	29.887	29.853	29.833	29.820	29.806	29.793	29.780	29.766	29.753	
29.739	29.726	29.713	29.700	29.688	29.675	29.663	29.652	29.641	29.631	29.622	
29.613	29.605	29.598	29.592	29.587	29.583	29.580	29.578	29.577	29.577	29.577	
29.579	29.581	29.584	29.588	29.593	29.599	29.605	29.612	29.620	29.628	29.637	
29.646	29.655	29.665	29.675	29.685	29.695	29.706	29.716	29.727	29.738	29.749	
29.760	29.770	29.781	29.792	29.803	29.814	29.824	29.835	29.845	29.856	29.872	
29.898	29.940	29.940									
29.940	29.940	29.883	29.848	29.826	29.812	29.797	29.783	29.768	29.754	29.739	
29.725	29.711	29.696	29.682	29.669	29.655	29.642	29.630	29.618	29.607	29.597	
29.587	29.579	29.571	29.565	29.559	29.555	29.551	29.549	29.548	29.547	29.548	
29.550	29.553	29.556	29.561	29.566	29.573	29.580	29.587	29.596	29.605	29.614	
29.624	29.634	29.645	29.656	29.667	29.678	29.689	29.701	29.712	29.724	29.736	
29.747	29.759	29.771	29.782	29.794	29.805	29.817	29.828	29.839	29.851	29.867	
29.895	29.940	29.940									
29.940	29.940	29.880	29.842	29.819	29.804	29.788	29.773	29.757	29.742	29.726	
29.711	29.695	29.680	29.664	29.649	29.635	29.621	29.607	29.594	29.582	29.571	
29.560	29.551	29.543	29.536	29.530	29.525	29.521	29.519	29.518	29.517	29.518	
29.520	29.523	29.527	29.532	29.538	29.545	29.553	29.562	29.571	29.580	29.591	
29.602	29.613	29.624	29.636	29.648	29.660	29.673	29.685	29.698	29.710	29.723	
29.735	29.747	29.760	29.772	29.785	29.797	29.809	29.821	29.833	29.845	29.863	
29.893	29.940	29.940									
29.940	29.940	29.876	29.836	29.812	29.796	29.779	29.763	29.746	29.730	29.713	
29.696	29.679	29.663	29.646	29.630	29.614	29.598	29.584	29.569	29.556	29.544	
29.532	29.522	29.513	29.506	29.499	29.494	29.490	29.488	29.487	29.486	29.487	
29.490	29.493	29.497	29.503	29.510	29.517	29.526	29.535	29.545	29.556	29.567	
29.579	29.591	29.604	29.617	29.630	29.643	29.656	29.669	29.683	29.696	29.709	
29.723	29.736	29.749	29.762	29.776	29.789	29.801	29.814	29.827	29.840	29.859	
29.890	29.940	29.940									
29.940	29.940	29.873	29.831	29.805	29.788	29.770	29.753	29.735	29.717	29.699	
29.682	29.664	29.646	29.628	29.610	29.593	29.576	29.559	29.544	29.529	29.516	
29.503	29.492	29.483	29.474	29.468	29.462	29.458	29.456	29.454	29.454	29.455	
29.458	29.462	29.467	29.473	29.480	29.488	29.498	29.508	29.519	29.531	29.543	
29.556	29.569	29.583	29.597	29.611	29.625	29.639	29.653	29.668	29.682	29.696	
29.711	29.725	29.739	29.753	29.767	29.780	29.794	29.808	29.821	29.834	29.854	
29.887	29.940	29.940									
29.940	29.940	29.870	29.825	29.798	29.780	29.762	29.743	29.724	29.705	29.686	
29.667	29.648	29.628	29.609	29.590	29.571	29.553	29.535	29.518	29.502	29.487	
29.473	29.461	29.451	29.442	29.435	29.429	29.425	29.422	29.421	29.421	29.422	
29.425	29.429	29.435	29.441	29.449	29.459	29.469	29.480	29.492	29.505	29.519	
29.533	29.547	29.562	29.577	29.592	29.607	29.622	29.638	29.653	29.668	29.683	
29.698	29.713	29.728	29.743	29.758	29.772	29.787	29.801	29.815	29.829	29.850	
29.885	29.940	29.940									
29.940	29.940	29.866	29.820	29.792	29.772	29.753	29.733	29.714	29.693	29.673	
29.653	29.632	29.611	29.590	29.570	29.549	29.529	29.509	29.491	29.473	29.457	
29.442	29.429	29.417	29.408	29.400	29.395	29.390	29.388	29.386	29.386	29.388	
29.391	29.396	29.401	29.409	29.418	29.428	29.439	29.451	29.465	29.479	29.494	
29.509	29.524	29.540	29.556	29.573	29.589	29.605	29.622	29.638	29.654	29.670	
29.686	29.702	29.718	29.733	29.749	29.764	29.779	29.794	29.809	29.824	29.846	
29.882	29.940	29.940									
29.940	29.940	29.863	29.815	29.785	29.765	29.745	29.724	29.703	29.682	29.660	
29.638	29.616	29.594	29.572	29.549	29.527	29.505	29.483	29.463	29.443	29.425	
29.409	29.395	29.383	29.373	29.365	29.359	29.355	29.352	29.351	29.351	29.353	
29.356	29.361	29.367	29.375	29.385	29.396	29.408	29.422	29.437	29.452	29.468	
29.485	29.501	29.519	29.536	29.553	29.571	29.588	29.606	29.623	29.640	29.657	
29.674	29.691	29.708	29.724	29.740	29.756	29.772	29.788	29.804	29.819	29.842	
29.880	29.940	29.940									
29.940	29.940	29.860	29.810	29.779	29.758	29.736	29.715	29.693	29.670	29.648	
29.625	29.601	29.577	29.553	29.529	29.504	29.480	29.457	29.434	29.413	29.393	
29.375	29.360	29.347	29.336	29.328	29.322	29.318	29.315	29.314	29.314	29.316	
29.320	29.325	29.332	29.340	29.351	29.363	29.377	29.392	29.408	29.425	29.442	
29.460	29.478	29.497	29.516	29.534	29.553	29.571	29.590	29.608	29.627	29.645	
29.662	29.680	29.697	29.715	29.732	29.749	29.765	29.782	29.798	29.814	29.838	
29.877	29.940	29.940									
29.940	29.940	29.857	29.805	29.773	29.751	29.729	29.706	29.683	29.660	29.636	
29.611	29.586	29.561	29.535	29.509	29.482	29.456	29.430	29.405	29.381	29.359	
29.340	29.323	29.309	29.298	29.290	29.284	29.280	29.278	29.277	29.277	29.279	

29.282	29.288	29.295	29.305	29.316	29.330	29.345	29.361	29.379	29.397	29.416
29.435	29.455	29.475	29.495	29.515	29.535	29.555	29.574	29.594	29.613	29.632
29.651	29.669	29.688	29.706	29.723	29.741	29.758	29.776	29.793	29.809	29.834
29.875	29.940	29.940								
29.940	29.940	29.855	29.801	29.767	29.744	29.721	29.698	29.674	29.649	29.624
29.598	29.572	29.545	29.517	29.489	29.460	29.432	29.403	29.375	29.349	29.325
29.303	29.285	29.270	29.259	29.251	29.246	29.242	29.240	29.239	29.239	29.241
29.244	29.249	29.257	29.268	29.280	29.295	29.312	29.330	29.349	29.369	29.390
29.411	29.432	29.453	29.475	29.496	29.517	29.538	29.559	29.579	29.600	29.620
29.639	29.659	29.678	29.697	29.715	29.734	29.752	29.770	29.787	29.805	29.830
29.873	29.940	29.940								
29.940	29.940	29.852	29.796	29.762	29.738	29.714	29.690	29.665	29.639	29.613
29.586	29.558	29.529	29.500	29.470	29.439	29.408	29.377	29.346	29.316	29.289
29.265	29.245	29.230	29.219	29.212	29.207	29.204	29.202	29.201	29.201	29.202
29.205	29.210	29.218	29.229	29.243	29.260	29.278	29.298	29.319	29.341	29.363
29.386	29.409	29.432	29.454	29.477	29.499	29.522	29.544	29.565	29.586	29.607
29.628	29.648	29.668	29.688	29.707	29.727	29.745	29.764	29.782	29.800	29.827
29.871	29.940	29.940								
29.940	29.940	29.850	29.792	29.757	29.733	29.708	29.683	29.657	29.630	29.603
29.574	29.545	29.515	29.484	29.452	29.419	29.385	29.351	29.317	29.284	29.253
29.226	29.205	29.189	29.179	29.173	29.169	29.166	29.165	29.164	29.163	29.164
29.166	29.171	29.179	29.191	29.206	29.224	29.244	29.266	29.289	29.313	29.337
29.361	29.386	29.410	29.434	29.458	29.482	29.505	29.529	29.551	29.574	29.596
29.617	29.638	29.659	29.680	29.700	29.720	29.739	29.758	29.777	29.796	29.823
29.869	29.940	29.940								
29.940	29.940	29.848	29.789	29.752	29.728	29.702	29.676	29.649	29.622	29.593
29.564	29.534	29.502	29.470	29.436	29.401	29.364	29.327	29.290	29.253	29.218
29.188	29.164	29.148	29.139	29.135	29.132	29.131	29.129	29.128	29.127	29.126
29.127	29.131	29.139	29.152	29.168	29.188	29.210	29.234	29.259	29.285	29.311
29.337	29.363	29.389	29.415	29.440	29.465	29.490	29.514	29.538	29.561	29.584
29.607	29.629	29.650	29.672	29.693	29.713	29.733	29.753	29.773	29.792	29.820
29.867	29.940	29.940								
29.940	29.940	29.846	29.786	29.748	29.723	29.697	29.670	29.643	29.614	29.585
29.555	29.524	29.491	29.457	29.421	29.384	29.346	29.306	29.265	29.225	29.186
29.151	29.125	29.109	29.102	29.100	29.099	29.098	29.097	29.095	29.093	29.091
29.090	29.093	29.100	29.113	29.131	29.153	29.177	29.203	29.230	29.258	29.285
29.313	29.341	29.368	29.395	29.422	29.448	29.474	29.500	29.525	29.549	29.573
29.597	29.620	29.642	29.664	29.686	29.707	29.728	29.748	29.768	29.788	29.817
29.865	29.940	29.940								
29.940	29.940	29.844	29.783	29.745	29.719	29.692	29.665	29.637	29.608	29.578
29.547	29.515	29.481	29.446	29.409	29.371	29.331	29.289	29.245	29.201	29.158
29.120	29.091	29.076	29.071	29.071	29.071	29.071	29.069	29.066	29.062	29.058
29.056	29.057	29.063	29.076	29.096	29.119	29.145	29.173	29.202	29.231	29.261
29.290	29.319	29.348	29.376	29.405	29.432	29.460	29.486	29.512	29.538	29.563
29.587	29.611	29.634	29.657	29.679	29.701	29.722	29.743	29.764	29.784	29.814
29.863	29.940	29.940								
29.940	29.940	29.843	29.780	29.742	29.715	29.688	29.661	29.632	29.603	29.572
29.541	29.508	29.473	29.438	29.400	29.361	29.319	29.276	29.232	29.186	29.141
29.099	29.068	29.054	29.050	29.050	29.050	29.049	29.047	29.042	29.037	29.031
29.026	29.025	29.030	29.043	29.064	29.089	29.116	29.146	29.176	29.206	29.237
29.267	29.298	29.328	29.358	29.388	29.417	29.445	29.473	29.500	29.527	29.553
29.578	29.603	29.627	29.650	29.673	29.695	29.717	29.739	29.760	29.781	29.812
29.861	29.940	29.940								
29.940	29.940	29.841	29.778	29.739	29.713	29.685	29.657	29.628	29.598	29.568
29.536	29.502	29.468	29.431	29.394	29.354	29.312	29.269	29.224	29.179	29.135
29.094	29.064	29.048	29.041	29.039	29.037	29.035	29.030	29.025	29.017	29.010
29.003	29.000	29.004	29.017	29.037	29.062	29.090	29.120	29.151	29.182	29.214
29.246	29.278	29.310	29.341	29.372	29.402	29.432	29.461	29.489	29.517	29.544
29.570	29.595	29.620	29.644	29.667	29.690	29.713	29.735	29.757	29.778	29.809
29.860	29.940	29.940								
29.940	29.940	29.841	29.777	29.737	29.710	29.683	29.654	29.625	29.595	29.564
29.532	29.499	29.464	29.427	29.390	29.350	29.309	29.267	29.223	29.180	29.138
29.101	29.071	29.053	29.042	29.036	29.031	29.026	29.020	29.013	29.004	28.996
28.988	28.984	28.987	28.999	29.017	29.041	29.068	29.097	29.128	29.160	29.192
29.225	29.259	29.292	29.324	29.357	29.388	29.419	29.449	29.479	29.507	29.535
29.562	29.588	29.613	29.638	29.662	29.686	29.709	29.731	29.753	29.775	29.807
29.859	29.940	29.940								
29.940	29.940	29.840	29.776	29.736	29.709	29.681	29.653	29.623	29.593	29.562
29.530	29.496	29.462	29.426	29.388	29.350	29.310	29.269	29.227	29.186	29.147
29.112	29.084	29.064	29.050	29.040	29.032	29.024	29.016	29.007	28.997	28.988
28.980	28.976	28.978	28.987	29.003	29.024	29.049	29.077	29.107	29.139	29.172
29.206	29.240	29.274	29.309	29.342	29.375	29.407	29.439	29.469	29.499	29.527
29.555	29.582	29.608	29.633	29.658	29.682	29.705	29.728	29.751	29.773	29.805
29.858	29.940	29.940								
29.940	29.940	29.839	29.775	29.735	29.708	29.680	29.651	29.622	29.592	29.561
29.529	29.496	29.461	29.426	29.389	29.351	29.313	29.273	29.234	29.195	29.159
29.126	29.099	29.077	29.060	29.047	29.036	29.026	29.015	29.005	28.994	28.984
28.976	28.972	28.972	28.978	28.991	29.009	29.031	29.057	29.086	29.118	29.152
29.187	29.222	29.258	29.294	29.329	29.363	29.397	29.429	29.460	29.491	29.520
29.549	29.576	29.603	29.629	29.654	29.678	29.702	29.726	29.748	29.771	29.804
29.857	29.940	29.940								

29.940	29.940	29.839	29.775	29.735	29.708	29.680	29.651	29.622	29.592	29.561
29.529	29.496	29.462	29.427	29.392	29.355	29.317	29.280	29.242	29.206	29.172
29.141	29.113	29.091	29.072	29.056	29.043	29.030	29.018	29.007	28.995	28.985
28.976	28.970	28.968	28.972	28.981	28.995	29.014	29.038	29.066	29.098	29.132
29.168	29.205	29.243	29.280	29.317	29.352	29.387	29.421	29.453	29.484	29.514
29.544	29.572	29.599	29.625	29.651	29.676	29.700	29.723	29.746	29.769	29.802
29.856	29.940	29.940								
29.940	29.940	29.839	29.775	29.735	29.708	29.680	29.652	29.623	29.593	29.562
29.530	29.498	29.465	29.430	29.395	29.360	29.324	29.288	29.252	29.217	29.185
29.154	29.128	29.104	29.084	29.067	29.051	29.037	29.024	29.011	28.998	28.987
28.977	28.970	28.966	28.966	28.971	28.981	28.997	29.019	29.046	29.078	29.113
29.151	29.190	29.229	29.268	29.306	29.343	29.379	29.413	29.447	29.479	29.510
29.539	29.568	29.596	29.622	29.648	29.673	29.698	29.722	29.745	29.768	29.801
29.855	29.940	29.940								
29.940	29.940	29.839	29.775	29.736	29.709	29.681	29.653	29.624	29.594	29.564
29.533	29.501	29.468	29.435	29.400	29.366	29.331	29.296	29.262	29.228	29.197
29.167	29.141	29.117	29.096	29.077	29.061	29.045	29.031	29.017	29.003	28.991
28.980	28.970	28.963	28.960	28.961	28.967	28.979	28.999	29.025	29.057	29.094
29.134	29.175	29.216	29.257	29.297	29.335	29.372	29.408	29.442	29.475	29.506
29.536	29.565	29.593	29.620	29.646	29.672	29.696	29.720	29.744	29.767	29.801
29.855	29.940	29.940								
29.940	29.940	29.840	29.776	29.737	29.710	29.682	29.655	29.626	29.597	29.567
29.536	29.505	29.472	29.440	29.406	29.372	29.338	29.305	29.271	29.239	29.208
29.179	29.153	29.129	29.107	29.088	29.070	29.054	29.039	29.024	29.010	28.996
28.983	28.972	28.962	28.955	28.951	28.952	28.961	28.977	29.003	29.037	29.076
29.119	29.162	29.206	29.248	29.290	29.329	29.367	29.404	29.439	29.472	29.504
29.534	29.564	29.592	29.619	29.645	29.671	29.696	29.720	29.743	29.766	29.800
29.855	29.940	29.940								
29.940	29.940	29.841	29.777	29.738	29.712	29.685	29.657	29.629	29.600	29.570
29.540	29.509	29.478	29.445	29.413	29.380	29.346	29.313	29.281	29.249	29.219
29.190	29.164	29.140	29.118	29.098	29.080	29.063	29.047	29.032	29.017	29.003
28.988	28.975	28.962	28.951	28.942	28.938	28.942	28.956	28.982	29.018	29.060
29.106	29.152	29.198	29.242	29.285	29.326	29.365	29.402	29.437	29.471	29.503
29.534	29.563	29.591	29.619	29.645	29.671	29.696	29.720	29.743	29.766	29.800
29.855	29.940	29.940								
29.940	29.940	29.842	29.779	29.740	29.714	29.687	29.660	29.632	29.604	29.575
29.545	29.514	29.483	29.452	29.420	29.387	29.355	29.322	29.290	29.259	29.229
29.200	29.173	29.149	29.127	29.107	29.089	29.072	29.056	29.041	29.026	29.011
28.996	28.980	28.965	28.950	28.936	28.927	28.925	28.936	28.963	29.002	29.048
29.097	29.146	29.194	29.240	29.283	29.325	29.364	29.402	29.437	29.471	29.503
29.534	29.564	29.592	29.619	29.646	29.671	29.696	29.720	29.744	29.767	29.801
29.855	29.940	29.940								
29.940	29.940	29.843	29.781	29.743	29.717	29.690	29.663	29.636	29.608	29.579
29.550	29.520	29.490	29.459	29.427	29.395	29.363	29.331	29.299	29.268	29.237
29.209	29.182	29.157	29.135	29.116	29.098	29.081	29.066	29.051	29.036	29.021
29.005	28.989	28.972	28.954	28.936	28.922	28.914	28.922	28.950	28.994	29.043
29.095	29.145	29.194	29.241	29.285	29.327	29.366	29.404	29.439	29.473	29.505
29.536	29.565	29.594	29.621	29.647	29.673	29.697	29.721	29.745	29.768	29.801
29.855	29.940	29.940								
29.940	29.940	29.844	29.783	29.745	29.720	29.694	29.668	29.641	29.613	29.585
29.556	29.527	29.497	29.467	29.436	29.404	29.372	29.340	29.308	29.276	29.246
29.216	29.189	29.165	29.143	29.123	29.106	29.090	29.075	29.061	29.048	29.034
29.018	29.002	28.984	28.965	28.946	28.929	28.918	28.922	28.952	28.997	29.048
29.100	29.151	29.200	29.246	29.290	29.332	29.371	29.408	29.443	29.477	29.509
29.539	29.568	29.596	29.623	29.650	29.675	29.699	29.723	29.746	29.769	29.802
29.856	29.940	29.940								
29.940	29.940	29.845	29.785	29.749	29.724	29.698	29.672	29.646	29.619	29.591
29.563	29.534	29.505	29.475	29.444	29.413	29.382	29.349	29.317	29.285	29.254
29.223	29.195	29.170	29.149	29.130	29.113	29.098	29.085	29.072	29.061	29.048
29.035	29.020	29.003	28.985	28.967	28.952	28.943	28.949	28.976	29.017	29.065
29.115	29.164	29.211	29.257	29.299	29.340	29.378	29.415	29.449	29.482	29.514
29.544	29.573	29.600	29.627	29.653	29.678	29.702	29.725	29.748	29.771	29.804
29.857	29.940	29.940								
29.940	29.940	29.847	29.788	29.752	29.728	29.703	29.677	29.651	29.625	29.598
29.570	29.542	29.514	29.484	29.454	29.423	29.392	29.360	29.327	29.294	29.262
29.230	29.201	29.175	29.154	29.136	29.120	29.105	29.092	29.083	29.075	29.066
29.055	29.042	29.028	29.013	28.998	28.987	28.982	28.990	29.014	29.049	29.092
29.138	29.183	29.228	29.271	29.312	29.351	29.388	29.424	29.457	29.490	29.520
29.550	29.578	29.605	29.631	29.657	29.681	29.705	29.728	29.751	29.773	29.805
29.858	29.940	29.940								
29.940	29.940	29.849	29.791	29.756	29.732	29.708	29.683	29.657	29.632	29.605
29.578	29.551	29.523	29.494	29.464	29.434	29.403	29.371	29.338	29.305	29.271
29.238	29.207	29.181	29.160	29.143	29.127	29.110	29.095	29.092	29.090	29.086
29.078	29.069	29.057	29.046	29.035	29.028	29.028	29.037	29.058	29.089	29.126
29.166	29.208	29.249	29.289	29.328	29.365	29.401	29.435	29.467	29.498	29.528
29.557	29.584	29.611	29.636	29.661	29.685	29.709	29.731	29.754	29.776	29.807
29.859	29.940	29.940								
29.940	29.940	29.851	29.795	29.760	29.737	29.713	29.689	29.664	29.639	29.613
29.587	29.560	29.533	29.505	29.476	29.446	29.415	29.384	29.351	29.317	29.283
29.248	29.216	29.188	29.169	29.153	29.135	29.111	29.078	29.096	29.106	29.108
29.105	29.098	29.091	29.083	29.076	29.073	29.075	29.085	29.104	29.131	29.163

29.198	29.235	29.273	29.310	29.346	29.381	29.415	29.447	29.479	29.509	29.537
29.565	29.592	29.618	29.642	29.667	29.690	29.713	29.735	29.757	29.778	29.810
29.860	29.940	29.940								
29.940	29.940	29.853	29.798	29.765	29.742	29.719	29.695	29.671	29.647	29.622
29.596	29.570	29.544	29.516	29.488	29.459	29.429	29.398	29.366	29.333	29.299
29.264	29.231	29.203	29.185	29.170	29.150	29.108	28.973	29.096	29.127	29.135
29.135	29.131	29.126	29.122	29.118	29.118	29.122	29.133	29.150	29.173	29.201
29.232	29.265	29.299	29.333	29.367	29.399	29.431	29.462	29.491	29.520	29.548
29.574	29.600	29.625	29.649	29.673	29.696	29.718	29.740	29.761	29.782	29.812
29.862	29.940	29.940								
29.940	29.940	29.855	29.802	29.769	29.747	29.725	29.702	29.679	29.655	29.631
29.606	29.581	29.555	29.529	29.502	29.474	29.445	29.415	29.384	29.352	29.320
29.287	29.256	29.230	29.212	29.198	29.182	29.160	29.130	29.150	29.163	29.168
29.168	29.166	29.164	29.161	29.160	29.162	29.168	29.179	29.194	29.215	29.239
29.267	29.296	29.327	29.358	29.388	29.419	29.448	29.477	29.505	29.533	29.559
29.585	29.609	29.633	29.657	29.680	29.702	29.723	29.744	29.765	29.785	29.815
29.864	29.940	29.940								
29.940	29.940	29.858	29.806	29.774	29.753	29.731	29.709	29.687	29.664	29.641
29.617	29.593	29.568	29.542	29.516	29.489	29.462	29.433	29.404	29.375	29.344
29.315	29.287	29.264	29.247	29.234	29.221	29.208	29.197	29.199	29.202	29.204
29.204	29.203	29.202	29.201	29.202	29.205	29.212	29.222	29.237	29.255	29.277
29.301	29.328	29.355	29.383	29.411	29.439	29.467	29.494	29.520	29.546	29.571
29.596	29.619	29.642	29.665	29.687	29.708	29.729	29.750	29.770	29.790	29.819
29.866	29.940	29.940								
29.940	29.940	29.860	29.810	29.780	29.759	29.738	29.717	29.695	29.673	29.651
29.628	29.604	29.581	29.556	29.532	29.506	29.480	29.454	29.426	29.399	29.372
29.345	29.321	29.301	29.284	29.271	29.261	29.251	29.244	29.242	29.242	29.241
29.241	29.240	29.240	29.241	29.243	29.247	29.254	29.264	29.278	29.294	29.314
29.335	29.359	29.383	29.409	29.435	29.460	29.486	29.511	29.536	29.560	29.584
29.607	29.630	29.652	29.674	29.695	29.715	29.735	29.755	29.775	29.794	29.822
29.868	29.940	29.940								
29.940	29.940	29.863	29.815	29.785	29.765	29.745	29.724	29.704	29.682	29.661
29.639	29.617	29.594	29.571	29.548	29.524	29.499	29.475	29.450	29.425	29.400
29.377	29.355	29.337	29.322	29.309	29.299	29.291	29.286	29.282	29.280	29.279
29.278	29.278	29.278	29.279	29.282	29.287	29.294	29.304	29.316	29.331	29.349
29.368	29.389	29.412	29.435	29.458	29.482	29.506	29.529	29.552	29.575	29.597
29.619	29.641	29.662	29.683	29.703	29.723	29.742	29.761	29.780	29.798	29.826
29.870	29.940	29.940								
29.940	29.940	29.866	29.819	29.791	29.772	29.752	29.732	29.713	29.692	29.672
29.651	29.630	29.608	29.587	29.564	29.542	29.519	29.496	29.473	29.451	29.429
29.408	29.389	29.372	29.358	29.346	29.337	29.330	29.324	29.320	29.317	29.315
29.314	29.314	29.315	29.317	29.320	29.325	29.332	29.342	29.353	29.367	29.383
29.400	29.419	29.439	29.460	29.482	29.504	29.525	29.547	29.569	29.590	29.611
29.632	29.653	29.673	29.692	29.712	29.730	29.749	29.767	29.785	29.803	29.829
29.872	29.940	29.940								
29.940	29.940	29.869	29.824	29.797	29.778	29.760	29.741	29.722	29.703	29.683
29.663	29.643	29.623	29.602	29.582	29.561	29.540	29.518	29.497	29.477	29.457
29.438	29.421	29.406	29.393	29.382	29.373	29.366	29.360	29.356	29.353	29.351
29.350	29.350	29.351	29.353	29.357	29.362	29.369	29.378	29.388	29.401	29.415
29.431	29.448	29.467	29.486	29.505	29.525	29.545	29.566	29.586	29.606	29.626
29.645	29.665	29.683	29.702	29.721	29.739	29.756	29.774	29.791	29.808	29.834
29.875	29.940	29.940								
29.940	29.940	29.872	29.829	29.803	29.785	29.767	29.749	29.731	29.713	29.694
29.676	29.657	29.638	29.618	29.599	29.579	29.560	29.541	29.521	29.503	29.485
29.468	29.453	29.439	29.427	29.416	29.408	29.401	29.395	29.391	29.388	29.386
29.385	29.385	29.386	29.388	29.392	29.397	29.404	29.412	29.422	29.434	29.447
29.461	29.477	29.493	29.511	29.529	29.547	29.566	29.584	29.603	29.622	29.640
29.659	29.677	29.695	29.712	29.730	29.747	29.764	29.781	29.797	29.814	29.838
29.877	29.940	29.940								
29.940	29.940	29.875	29.834	29.809	29.792	29.775	29.758	29.741	29.724	29.706
29.688	29.671	29.653	29.635	29.617	29.598	29.580	29.563	29.545	29.528	29.512
29.497	29.483	29.470	29.459	29.449	29.441	29.434	29.429	29.425	29.422	29.420
29.419	29.419	29.420	29.423	29.426	29.431	29.437	29.445	29.454	29.465	29.477
29.490	29.504	29.519	29.535	29.552	29.568	29.585	29.603	29.620	29.638	29.655
29.672	29.689	29.706	29.723	29.739	29.756	29.772	29.788	29.803	29.819	29.842
29.880	29.940	29.940								
29.940	29.940	29.878	29.839	29.815	29.799	29.783	29.767	29.751	29.734	29.718
29.701	29.685	29.668	29.651	29.634	29.617	29.601	29.584	29.568	29.553	29.538
29.524	29.512	29.500	29.490	29.481	29.473	29.467	29.462	29.458	29.455	29.453
29.452	29.452	29.453	29.455	29.459	29.464	29.469	29.477	29.485	29.495	29.506
29.518	29.531	29.545	29.559	29.574	29.589	29.605	29.621	29.637	29.654	29.670
29.686	29.702	29.718	29.733	29.749	29.764	29.780	29.795	29.810	29.825	29.847
29.883	29.940	29.940								
29.940	29.940	29.881	29.844	29.821	29.806	29.791	29.776	29.761	29.745	29.730
29.714	29.699	29.683	29.667	29.652	29.636	29.621	29.606	29.591	29.577	29.564
29.551	29.539	29.529	29.519	29.511	29.504	29.498	29.493	29.489	29.486	29.484
29.484	29.484	29.485	29.487	29.490	29.495	29.500	29.507	29.515	29.524	29.534
29.545	29.557	29.569	29.582	29.596	29.610	29.625	29.640	29.654	29.669	29.685
29.700	29.714	29.729	29.744	29.759	29.773	29.788	29.802	29.816	29.830	29.851
29.885	29.940	29.940								
29.940	29.940	29.884	29.849	29.828	29.814	29.799	29.785	29.771	29.756	29.742

29.727	29.713	29.698	29.683	29.669	29.655	29.641	29.627	29.614	29.601	29.588
29.577	29.566	29.557	29.548	29.540	29.533	29.528	29.523	29.520	29.517	29.515
29.514	29.515	29.516	29.518	29.521	29.525	29.530	29.536	29.544	29.552	29.561
29.571	29.582	29.593	29.605	29.618	29.631	29.644	29.658	29.672	29.685	29.699
29.713	29.727	29.741	29.755	29.769	29.782	29.796	29.809	29.823	29.836	29.856
29.888	29.940	29.940								
29.940	29.940	29.887	29.854	29.834	29.821	29.808	29.794	29.781	29.767	29.754
29.740	29.727	29.713	29.700	29.686	29.673	29.660	29.648	29.635	29.624	29.613
29.602	29.592	29.583	29.575	29.568	29.562	29.557	29.553	29.549	29.547	29.545
29.544	29.545	29.546	29.548	29.550	29.554	29.559	29.565	29.571	29.579	29.587
29.596	29.606	29.617	29.628	29.639	29.651	29.663	29.676	29.688	29.701	29.714
29.727	29.740	29.753	29.766	29.779	29.792	29.804	29.817	29.829	29.842	29.860
29.891	29.940	29.940								
29.940	29.940	29.890	29.860	29.841	29.828	29.816	29.803	29.791	29.778	29.766
29.753	29.741	29.728	29.716	29.703	29.691	29.679	29.668	29.657	29.646	29.636
29.626	29.618	29.609	29.602	29.596	29.590	29.585	29.581	29.578	29.576	29.574
29.573	29.574	29.575	29.576	29.579	29.583	29.587	29.592	29.598	29.605	29.613
29.621	29.630	29.639	29.650	29.660	29.671	29.682	29.694	29.705	29.717	29.729
29.741	29.753	29.765	29.777	29.789	29.801	29.813	29.824	29.836	29.848	29.865
29.894	29.940	29.940								
29.940	29.940	29.894	29.865	29.848	29.836	29.824	29.813	29.801	29.789	29.778
29.766	29.754	29.743	29.732	29.720	29.709	29.698	29.688	29.678	29.668	29.659
29.650	29.642	29.635	29.628	29.622	29.617	29.612	29.609	29.606	29.604	29.602
29.602	29.602	29.603	29.604	29.607	29.610	29.614	29.619	29.624	29.631	29.637
29.645	29.653	29.662	29.671	29.680	29.690	29.701	29.711	29.722	29.733	29.744
29.755	29.766	29.777	29.788	29.799	29.810	29.821	29.832	29.843	29.854	29.870
29.897	29.940	29.940								
29.940	29.940	29.897	29.870	29.854	29.843	29.833	29.822	29.811	29.800	29.790
29.779	29.768	29.758	29.747	29.737	29.727	29.717	29.708	29.698	29.689	29.681
29.673	29.666	29.659	29.653	29.648	29.643	29.639	29.635	29.633	29.631	29.629
29.629	29.629	29.630	29.631	29.634	29.637	29.640	29.645	29.650	29.655	29.662
29.668	29.676	29.684	29.692	29.701	29.710	29.719	29.728	29.738	29.748	29.758
29.768	29.778	29.789	29.799	29.809	29.819	29.830	29.840	29.850	29.860	29.875
29.900	29.940	29.940								
29.940	29.940	29.900	29.876	29.861	29.851	29.841	29.831	29.821	29.811	29.801
29.792	29.782	29.772	29.763	29.753	29.744	29.735	29.727	29.718	29.710	29.703
29.696	29.689	29.683	29.677	29.673	29.668	29.665	29.661	29.659	29.657	29.656
29.655	29.656	29.656	29.658	29.660	29.663	29.666	29.670	29.674	29.679	29.685
29.691	29.698	29.705	29.713	29.720	29.729	29.737	29.746	29.754	29.763	29.773
29.782	29.791	29.801	29.810	29.819	29.829	29.838	29.847	29.857	29.866	29.880
29.903	29.940	29.940								
29.940	29.940	29.904	29.881	29.867	29.858	29.849	29.840	29.831	29.822	29.813
29.804	29.796	29.787	29.778	29.770	29.762	29.753	29.746	29.738	29.731	29.724
29.718	29.712	29.706	29.701	29.697	29.693	29.690	29.687	29.685	29.683	29.682
29.681	29.682	29.682	29.683	29.685	29.688	29.691	29.694	29.698	29.703	29.708
29.714	29.720	29.726	29.733	29.740	29.747	29.755	29.763	29.771	29.779	29.787
29.795	29.804	29.812	29.821	29.829	29.838	29.847	29.855	29.864	29.872	29.885
29.906	29.940	29.940								
29.940	29.940	29.907	29.886	29.874	29.866	29.858	29.849	29.841	29.833	29.825
29.817	29.809	29.801	29.793	29.786	29.778	29.771	29.764	29.758	29.751	29.745
29.739	29.734	29.729	29.725	29.721	29.717	29.714	29.712	29.710	29.708	29.707
29.707	29.707	29.707	29.709	29.710	29.712	29.715	29.718	29.722	29.726	29.731
29.736	29.741	29.747	29.753	29.759	29.765	29.772	29.779	29.787	29.794	29.801
29.809	29.816	29.824	29.832	29.840	29.847	29.855	29.863	29.871	29.878	29.890
29.909	29.940	29.940								
29.940	29.940	29.910	29.892	29.881	29.873	29.866	29.859	29.851	29.844	29.837
29.830	29.822	29.815	29.809	29.802	29.795	29.789	29.783	29.777	29.771	29.766
29.760	29.756	29.751	29.747	29.744	29.741	29.738	29.736	29.734	29.733	29.732
29.732	29.732	29.732	29.733	29.735	29.737	29.739	29.742	29.745	29.749	29.753
29.757	29.762	29.767	29.772	29.778	29.784	29.790	29.796	29.802	29.809	29.815
29.822	29.829	29.836	29.843	29.850	29.857	29.864	29.870	29.877	29.884	29.895
29.912	29.940	29.940								
29.940	29.940	29.913	29.897	29.887	29.881	29.874	29.868	29.861	29.855	29.848
29.842	29.836	29.830	29.823	29.818	29.812	29.806	29.801	29.795	29.790	29.786
29.781	29.777	29.773	29.770	29.767	29.764	29.762	29.760	29.758	29.757	29.756
29.756	29.756	29.756	29.757	29.759	29.760	29.762	29.765	29.768	29.771	29.774
29.778	29.782	29.787	29.791	29.796	29.801	29.807	29.812	29.818	29.824	29.829
29.835	29.841	29.847	29.854	29.860	29.866	29.872	29.878	29.884	29.891	29.900
29.915	29.940	29.940								
29.940	29.940	29.918	29.905	29.897	29.892	29.887	29.881	29.876	29.871	29.866
29.861	29.856	29.851	29.846	29.841	29.836	29.832	29.827	29.823	29.819	29.815
29.812	29.809	29.806	29.803	29.800	29.798	29.796	29.795	29.793	29.792	29.792
29.792	29.792	29.792	29.793	29.794	29.795	29.797	29.799	29.801	29.804	29.806
29.809	29.813	29.816	29.820	29.824	29.828	29.832	29.837	29.841	29.846	29.850
29.855	29.860	29.865	29.870	29.875	29.880	29.885	29.890	29.895	29.900	29.907
29.920	29.940	29.940								
29.940	29.940	29.927	29.918	29.914	29.910	29.907	29.904	29.901	29.897	29.894
29.891	29.888	29.885	29.882	29.879	29.876	29.874	29.871	29.868	29.866	29.864
29.862	29.860	29.858	29.856	29.855	29.853	29.852	29.851	29.850	29.850	29.850
29.849	29.849	29.850	29.850	29.851	29.851	29.852	29.854	29.855	29.857	29.858
29.860	29.862	29.864	29.866	29.869	29.871	29.874	29.877	29.879	29.882	29.885

