JCI
Jones Chemicals Inc.

RECEIVED
AUG 23 2004
Environmental Cleanup Office

August 19, 2004

Harry F. Bell, Ph.D.
U.S. Environmental Protection Agency
Senior Environmental Employment Program
1200 Sixth Avenue, MS: ECL-116
Seattle, Washington 98101

RE: JCI Jones Chemicals, Inc., Tacoma, WA
August 5, 2004 RMP Inspection

Dear Mr. Bell:

This letter is written in follow up to the RMP Inspection that you conducted at our Tacoma, Washington facility on Thursday August 5, 2004. We would like to thank you again for the time that you and your team members Kelly Huynh and Paula Fedirchuk spent at our facility reviewing our operations and our RMP documentation. During the exit briefing, you requested that we send you several documents for your review, the following of which are enclosed:

- A copy of our most recent Process Hazard Analysis (PHA) dated April 16, 2004.

- A copy of our most recent certified Compliance Audit dated January 30, 2002. Please note that we are still trying to locate a copy of the Compliance Audit that was conducted on February 9, 1999. Given that we had a different Branch Manager at that time, we have been unable to locate his files on this. However, I can assure you that a Compliance Audit was conducted on this date as I personally reviewed all of the Compliance Audits that were conducted by all 12 of our facilities.

- A copy of the Off-Site Consequence Analysis that was done by our consultant LFR Levine Fricke.

- A copy of our documentation regarding the worse-case and alternative-case release scenarios that was provided to LFR Levine Fricke.

- A copy of the printout from the Post Office where the RMP was mailed out from showing that the RMP was mailed to the RMP Reporting Center in Lanham-Seabrook, Maryland on June 19, 2004.

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www.jcichemicals.com

As we hope you saw and will agree, JCI has spent a tremendous amount of time and has invested a tremendous amount of money and resources into making our facility as safe and secure as possible, as well as making our RMP Program the best that it can be.

Please contact me at (585) 538-2314 if you have any questions or require additional information.

Very truly yours,

JCI Jones Chemicals, Inc.

Timothy J. Gaffney
Executive Vice President

TJG:tg

Enclosure

Cc Scott Donahoe, JCI, Tacoma, WA

Process Safety Management Audit

RECEIVED
AUG 23 2004
Environmental Cleanup Office

Branch : ___Tacoma_____

Date: ___1-30-02_____

Audit Team: ___Scott Donahoe_____ _
_ Ken McDonald___ _____

____Jerry Schuss_____ _____

_____John Rink_____ _____

1. Employee Participation

Is there a written statement or policy on Process Safety Management?

Yes ___X_____ No _____

Were both employees and management involved in developing the PHA and the PSM? Is there documentation to prove it?

Yes ___X_____ No _____

Do employees have access to the PHA? Is there a notice, on the plant bulletin board, to alert them of when and where the PHA is available?

Yes _____X____ No _____

Results: _____All were yes were awnsers_____
_____
_____
_____

Deadline for Correction:
_____N/A_____

Date of Correction:
____N/A_____

2. Process Safety Information

Are current MSDS available for all "Highly Hazardous Chemicals"?

Yes ____X_____ No _____

Is there information pertaining to the technology of the process available?

Yes _____X_____ No _____

Does it address:

Block Flow or Flow Diagrams	Yes __X_____	No _____
Process Chemistry	Yes ___X_____	No _____
Maximum Intended Inventory	Yes ___X_____	No _____
Evaluations of Deviations	Yes ____X____	No _____

Is there information pertaining to the equipment in the process available?

Yes _____X_____ No _____

Does it address:

Materials of Construction	Yes ___X_____	No _____
P&ID	Yes ____X____	No _____
Electrical Classification	Yes _____X___	No _____
Relief System Design	Yes _____X__	No _____
Ventilation Design	Yes __X_____	No _____
Design Codes & Standards Employed	Yes ___X_____	No _____
Material and Energy Balances	Yes ____X____	No _____
Safety Systems	Yes _____X___	No _____

Is it documented that all equipment complies with recognized and general good engineering practices?

Yes __X_____ No _____

Is it documented that all existing equipment outside of current industry standards is designed, maintained, inspected, tested and operated in a safe manner?

Yes ____X_____ No _____

Results: _____All yes answers_____

_____

_____

_____

Deadline for Correction:
__N/A_____

Date of Correction:
_____N/A_____

3. Process Hazard Analysis

Is there a current PHA for the plant, which covers current 'Highly Hazardous Chemicals' used?

Yes ____X_____ No _____

What Methodologies were used to evaluate the process? _____What if's_____

Does the PHA address the following:

Hazardous of the process	Yes _X_____	No _____
Previous "Large Potential" Incidents	Yes __X_____	No _____
Engineering and Administrative Controls	Yes ___X_____	No _____
Consequences of Failed Eng & Admin Controls	Yes ____X____	No _____
Facility Sitting	Yes _____X___	No _____
Human Factors	Yes _____X__	No _____
S&H Effects of Failure to Control Employees	Yes _____X_	No _____

Who conducted the PHA? Names of People Involved.

___Scott Donahoe_____ Jerry Schuss_____
_____

__Ken McDonald_____ John Rink_____
___James Groh_____

Is there a procedure to address the findings?

Yes _X_____ No _____

Does it address:

Actions to be taken	Yes __X_____	No _____
Written Schedule of Completions Deadlines	Yes __X_____	No _____
Communication to Employees Affected	Yes _X_____	No _____

Is the PHA conducted every five years?

Yes ___X_____ No _____

Are past PHA's available?

Yes ___X_____ No _____

Results: _____All Yes

_____

_____

_____

_____

Deadline for Correction:

____N/A_____

Date of Correction:

_____N/A_____

4. Operating Procedures

Are there specific operating procedures to cover all HHC?

Yes ___x_____ No _____

Do they address the following:

Initial Startup	Yes _x_____	No _____
Normal Operations	Yes __x_____	No _____
Temporary Operations	Yes ___x_____	No _____
Emergency Shutdown	Yes __x_____	No _____
Emergency Operations	Yes __x_____	No _____
Startup Following Emergency Shutdown	Yes __x_____	No _____
Consequences of Deviations	Yes __x_____	No _____
Hazardous Chemicals Used in Process	Yes __x_____	No _____
Precautions to Prevent Exposure	Yes __x_____	No _____
Control Measures as Exposure Occurs	Yes __x_____	No _____
QC of Raw Materials & Inventory Levels	Yes __x_____	No _____
Any Unique Hazards	Yes __x_____	No _____
Safety Systems & Functions	Yes __x_____	No _____

Are operating procedures reviewed as often as necessary?

Yes __X_____ No _____

Are operating procedures certified annually; that they are current and accurate?

Yes ___X_____ No _____

Have safe work practices been implemented to control hazards during operations?

Yes ___X_____ No _____

Do they cover the following:

Lockout / Tag Out	Yes __X_____	No _____
Confined Space Entry	Yes ___X_____	No _____
Control Over Entry to the Facility	Yes ____X____	No _____
Opening Process Equipment or Piping	Yes _____X___	No _____

Results: _____All Yes_____

_____

_____

_____

Deadline for Correction:

_____N/A_____

Date of Correction:

_____N/A_____

5. Training

Is "Initial Training" done and documented?

Yes ___X_____ No _____

Has employer certified, in writing, that employee already operating systems have the knowledge, skills and ability to operate systems safely?

Yes ___X_____ No _____

Is refresher training held at least every three years?

Yes ___X_____ No _____

Is training documented in such a way that the employer is ascertain that the employee understands the training?

Yes ___X_____ No _____

Results: _____Yes on all_____
_____
_____
_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

6. Contractors

Is a contractor's safety performance & safety program used in selection potential contractors?

Yes ___X_____ No _____

Are contractors informed of potential hazards on site?

Yes ___X_____ No _____

Are contractors informed of the plants "Emergency Action Plan"?

Yes ___X_____ No _____

Does plant practice "Safe Work Practices" to control contractor's access to the plant?

Yes ____X_____ No _____

Are contractors periodically evaluated for their compliance to PSM?

Yes ____X_____ No _____

Is a contractors " Injury / Illness" log maintained?

Yes ___X_____ No _____

Results: _____All
Yes_____
_____

_____

_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

7. Pre – Startup Safety Review

Was a pre-startup safety review conducted at the new or significantly modified facility?

Yes ___x_____ No _____

Did the pre-startup review cover the following?

Construction & Equipment within design Specs	yes ___X_____	No _____
Safety & Maintenance Procedures in Place	Yes ____X____	No _____
Operating & Emergency Procedures in Place	Yes ___X_____	No _____
Has PHA Been Completed	Yes ___X_____	No _____
Has Employees Training Been Completed	Yes ___X_____	No _____

Results: _____All yes_____

_____

_____

_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

8. Mechanical Integrity

Is there a written program to maintain the on-going integrity of process equipment?

Yes ____x____ No _____

Is maintenance training, relating to PSM, being held and documented?

Yes _x_____ No _____

Are inspections and testing being held on process equipment?

Yes _____x__ No _____

Are the following items covered:

Do the Inspections & Tests Follow Recognized Generally Accepted Engineering Principals	Yes __x_____	No _____
Are Frequency of Inspections Based Off Manufactures Recommendations	Yes ____x____	No _____
Are Inspections Being Documented	Yes ___x_____	No _____
Does Documentation Cover: Date, Name Of Inspector, Identifier of Equipment, Description of Inspection and Results	Yes _x_____	No _____

Is deficient equipment repaired or placed out of service?

Yes ___x_____ No _____

Is the process equipment suitable for the process it is to be used in?

Yes ___x_____ No _____

Is equipment installed correctly?

Yes ____x____ No _____

Are spare parts and maintenance materials suitable for the process to be used in?

Yes _____x___ No _____

Results: _____All
Yes_____
_____
_____
_____

Deadline for Correction: _____

Date of Correction: _____

9. Hot Work Permit

Does the plant use "Hot Work Permits"?

Yes _x_____ No _____

Does the permit cover the following:

Date	Yes ____x____	No _____
Identify Object Hot Work will be Performed	Yes ____x____	No _____

Are Hot Work Permits kept on file until hot work is completed?

Yes ____x____ No _____

Results: _____All
Yes_____
_____
_____
_____

Deadline for Correction: _____

Date of Correction: _____

10. Management of Change

Is there a written procedure that covers new chemicals, technology, equipment, procedures and changes to the facility that affects the process?

Yes ____x____ No _____

Does it address:

Basis of the Change	Yes _x_____	No _____
Impact on Health & Safety	Yes __x_____	No _____
Modification to Operating Procedures	Yes __x_____	No _____
Time Period of Change	Yes __x_____	No _____
Authorization of Change	Yes __x_____	No _____

Is documented training performed on new changes?

Yes ___x_____ No _____

If a change, results in a modification of the plants "Process Safety Information" is the PSI updated?

Yes ___x_____ No _____

If a change, results in a modification to the plants operating procedures are the operating procedures updated?

Yes _x_____ No _____

Results: _____All
Yes_____
_____
_____
_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

11. Incident Investigation

Are all incidents that could have resulted in a catastrophic release of a HHC from the facility investigated?

Yes ____x____ No _____

Are incidents investigated within 48 hours of occurrence?

Yes ___x_____ No _____

Does an investigation team investigate incidents?

Yes ___x_____ No _____

Are incidents reports prepared in writing?

Yes ___x_____ No _____

Do they cover the following:

Date of Incident	Yes ___x_____	No _____
Date of Investigation	Yes ___x_____	No _____
Description of Incident	Yes __x_____	No _____
Factors that Contributed to the Incident	Yes __x_____	No _____
Recommendations for Prevention	Yes __x_____	No _____

Is there a written policy to address incident report findings?

Yes ___x_____ No _____

Are resolutions and corrections, from incidents, documented?

Yes ____x____ No _____

Are incidents reports reviewed with effected personnel?

Yes ___x_____ No _____

Are incident investigations reports retained for five years?

Yes ___x_____ No _____

Results:
_____Yes_____
_____
_____
_____
____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

12. Emergency Planning

Does the plant have an "Emergency Response Plan"?

Yes ___x_____ No _____

Does it comply with OSHA 29 CFR 1910.120 (a), (p) & (q) ?

Yes _____x___ No _____

Results: _____all yes_____

_____

_____

_____

Deadline for Correction:

_____N/A_____

Date of Correction:

_____N/A_____

13. Compliance Audits

Are practices and policies of the PSM being evaluated every three years?

Yes _x_____ No _____

Is a compliance audit being performed by at least one person familiar with the process?

Yes __x_____ No _____

Is a written report generated from the results of the audit?

Yes _x_____ No _____

Are deficiencies found from the audit being corrected and documented?

Yes ____x____ No _____

Are the two most recent audits retained for review?

Yes ____x____ No _____

Results: _____ALL
Yes_____
_____
_____
_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

14. Trade Secrets

Are there any trade secrets in the plant process?

Yes _____ No ____x____

Results: _____# 14 / No Trade Secretes.

_____

_____

_____

_____

Deadline for Correction:
_____N/A_____

Date of Correction:
_____N/A_____

PSM/RMP COMPLIANCE AUDIT CERTIFICATION

This audit evaluated compliance with the provisions of the Occupational Safety and Health Administration's Process Safety Management Standard for Highly Hazardous Chemicals as specified in 29 CFR Part 1910.119, and the United States Environmental Protection Agency's Chemical Accident Prevention Provisions as specified in 40 CFR Part 68. The audit verified that the procedures and practices developed under these rules are adequate and are being implemented as required.

Name of Audit Team Leader: Scott Donahoe

Title of Audit Team Leader: Branch Manager/ Vice President of West Coast Operations.

Signature of Audit Team Leader:

Date: 1-30-02

June 8, 2004

001-09252-00

RECEIVED
AUG 23 2004
Environmental Cleanup Office

Mr. Timothy J. Gaffney
Vice President
Environmental Affairs
Jones Chemicals, Inc.
100 Sunny Sol Blvd.
Caledonia, New York 14423

Subject: Offsite Consequence Analysis for Jones Chemicals, Inc.

Dear Mr. Gaffney:

Levine·Fricke is pleased to present the enclosed off-site analysis to assist Jones Chemicals, Inc. (Jones) in meeting the recertification requirements of the United States Environmental Protection Agency's (US EPA) Risk Management Program (RMP) regulations. The work was completed in accordance with Section 40 of the Code of Federal Regulations (CFR), Part 68 (40CFR68) and our proposal dated April 20, 2004. LFR conducted off-site consequence analyses for the Jones facilities in each of the following eleven cities:

- Barberton, Ohio
- Beech Grove, Indiana
- Caledonia, New York
- Charlotte, North Carolina
- Fort Lauderdale, Florida
- Jacksonville, Florida
- Merrimack, New Hampshire
- Milford, Virginia
- Riverview, Michigan
- Tacoma, Washington
- Warwick, New York

As requested, LFR evaluated worst-case and alternative-case scenarios for potential chlorine and sulfur dioxide releases. The worst-case calculations are based on two scenarios: (A) complete release of 180,000 pounds of chlorine from a railcar; and (B) complete release of chlorine from a 2,000 pound container. The alternative-case calculations are based on four scenarios: (A) less than 1 pound release of chlorine as a result of an employee failing to ensure a proper connection prior to beginning the filling process at the chlorine cylinder filling station; (B) less than 1 pound release of sulfur dioxide as a result of an employee failing to ensure a proper connection prior to beginning the filling process at the sulfur dioxide cylinder filling station; (C) trace release (0.25 pounds) of chlorine due to an improperly closed cylinder valve while the container is in storage;

LFR

(D) trace release (0.25 pounds) of sulfur dioxide due to an improperly closed cylinder valve while the container is in storage. For each of the eleven facilities, the radii of impact extended beyond the property boundary for both the worst and alternative case scenarios. To document these scenarios, LFR has prepared the following:

1. Toxic endpoint data from EPA's RMP Comp program. The impact radius was determined by modeling the chemicals as toxic gas liquefied under pressure and using the release pounds from the different scenarios listed above. The worst-case scenario was modeled as Stability Class F with a wind speed of 1.5 meters per second. The alternative-case was modeled as Stability Class D with a wind speed of 3.0 meters per second. According to EPA's "Guideline On Air Quality Models" manual, the topography surrounding the facility may be considered rural if there is less than 750 people per a square kilometer (km^2). All site locations, except Fort Lauderdale, Florida, had a population less than 750 people/km^2, and therefore, were modeled as rural. Fort Lauderdale was modeled as urban.

2. Table 1 presents the latitude and longitude of the reference point at the facility, the scenario identification, the associated impact radii, the residential population estimate and public and environmental receptor inventories within the impact zones surrounding each of the Jones facilities. Census data was retrieved from Claritas Inc., a marketing information resource, and public receptor information was retrieved from the United States Geological Survey (USGS) National Mapping Information Program Geographic Names Information System (GNIS).

3. Supporting documentation for population and receptor estimates.

4. Marplot figures with the radius of impact, public receptor locations, and affected counties for both worst-case and alternative-case scenarios.

We thank you for the opportunity to assist you with this work. Please feel free to contact us at (510) 652-4500 if you have any questions. We look forward to continuing work with you on future projects.

Sincerely,

Doug Wolf
Principal Engineer

Ramkishore Rao
Senior Engineer

Enclosures

Table 1
Inventory of Public and Environmental Receptors for Jones Chemical Facilities
Jones Chemical Inc., Caledonia, NY

Branch	Latitude (Decimal)	Longitude (Decimal)	Scenario	Impact Radius (mile)	Population	Schools	Residences	Hospitals	Prisons	Recreation Areas	Commercial Areas	Woods, Forests or Monuments	Wildlife Sanctuaries	Federal Wilderness Areas
Barberton, OH	40.97886111	-81.60938889	Cl_2 Worst-Case "A"	25	1,286,164	Y	Y	Y	Y	Y	Y	Y	Y	N
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	0	N	N	N	N	N	Y	N	N	N
Beech Grove, IN	39.72775	-86.08861111	Cl_2 Worst-Case "A"	25	1,450,430	Y	Y	Y	Y	Y	Y	Y	Y	N
			Cl_2 Alternative-Case "A"	0.1	58	N	Y	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	58	N	Y	N	N	N	Y	N	N	N
Caledonia, NY	42.976531	-77.845561	Cl_2 Worst-Case "A"	25	878,368	Y	Y	Y	Y	Y	Y	Y	Y	N
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	N	N	N	N
			SO_2 Alternative-Case "B"	0.1	0	N	N	N	N	N	N	N	N	N
Charlotte, NC	35.26638889	-80.90888889	Cl_2 Worst-Case "A"	25	1,413,909	Y	Y	Y	Y	Y	Y	Y	Y	N
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	0	N	N	N	N	N	Y	N	N	N
Fort Lauderdale, FL	26.15444444	-80.16825	Cl_2 Worst-Case "B"	1.3	27,883	Y	Y	N	N	Y	Y	N	N	N
			Cl_2 Alternative-Case "C"	0.1	10	Y	Y	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "D"	0.1	10	Y	Y	N	N	N	Y	N	N	N
Jacksonville, FL	30.34041667	-81.63013889	Cl_2 Worst-Case "A"	25	1,064,810	Y	Y	Y	Y	Y	Y	Y	Y	N
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	0	N	N	N	N	N	Y	N	N	N
Merrimack, NH	42.85722222	-71.48833333	Cl_2 Worst-Case "A"	25	1,255,440	Y	Y	Y	Y	Y	Y	Y	Y	Y
			Cl_2 Alternative-Case "A"	0.1	64	N	Y	N	N	N	Y	Y	N	N
			SO_2 Alternative-Case "D"	0.1	64	N	Y	N	N	N	Y	Y	N	N
Milford, VA	38.01083333	-77.37222222	Cl_2 Worst-Case "A"	25	272,741	Y	Y	Y	Y	Y	Y	N	Y	N
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	N	N	N	N
			SO_2 Alternative-Case "D"	0.1	0	N	N	N	N	N	N	N	N	N
Riverview,MI	42.17711111	-83.16786111	Cl_2 Worst-Case "A"	25	2,774,433	Y	Y	Y	Y	Y	Y	Y	Y	Y
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	0	N	N	N	N	N	Y	N	N	N
Tacoma, WA	47.26458333	-122.3591389	Cl_2 Worst-Case "A"	25	1,889,626	Y	Y	Y	Y	Y	Y	Y	Y	Y
			Cl_2 Alternative-Case "A"	0.1	0	N	N	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "D"	0.1	0	N	N	N	N	N	Y	N	N	N
Warwick, NY	41.252205	-74.373509	Cl_2 Worst-Case "A"	25	1,285,145	Y	Y	Y	Y	Y	Y	Y	Y	Y
			Cl_2 Alternative-Case "A"	0.1	15	N	Y	N	N	N	Y	N	N	N
			SO_2 Alternative-Case "B"	0.1	15	N	Y	N	N	N	Y	N	N	N

RMP COMP Data Sheets

A (outdoor) Worst-Case

All "A" Secnarios for Worst-Case Outdoor Chlorine Releases (RURAL Area)

RMP*Comp Ver. 1.07
Results of Consequence Analysis

Chemical: Chlorine
CAS #: 7782-50-5
Category: Toxic Gas
Scenario: Worst-case
Liquefied under pressure
Quantity Released: 180000 pounds
Release Duration: 10 min
Release Rate: 18000 pounds per min
Mitigation Measures: NONE
Topography: Rural surroundings (terrain generally flat and unobstructed)
Toxic Endpoint: 0.0087 mg/L; basis: ERPG-2
Estimated Distance to Toxic Endpoint: >25 miles (>40 kilometers); report as 25 miles

--------Assumptions About This Scenario---------
Wind Speed: 1.5 meters/second (3.4 miles/hour)
Stability Class: F
Air Temperature: 77 degrees F (25 degrees C)

All "A" Scenarios for Alternative-Case Indoor Chlorine Releases (RURAL Area)

RMP*Comp Ver. 1.07
Results of Consequence Analysis

Chemical: Chlorine
CAS #: 7782-50-5
Category: Toxic Gas
Scenario: Alternative
Liquefied under pressure
Release Duration: 10 minutes
Release Rate: 1 pounds per min
Mitigation Measures: Release in enclosed space, in direct contact with outside air

Topography: Rural surroundings (terrain generally flat and unobstructed)
Toxic Endpoint: 0.0087 mg/L; basis: ERPG-2
Estimated Distance to Toxic Endpoint: <0.1 miles (<0.16 kilometers); report as 0.1 mile

--------Assumptions About This Scenario---------
Wind Speed: 3 meters/second (6.7 miles/hour)
Stability Class: D
Air Temperature: 77 degrees F (25 degrees C)

All "D" Scenarios for Alternative-Case Indoor Sulfur Dioxide Releases (RURAL Area)

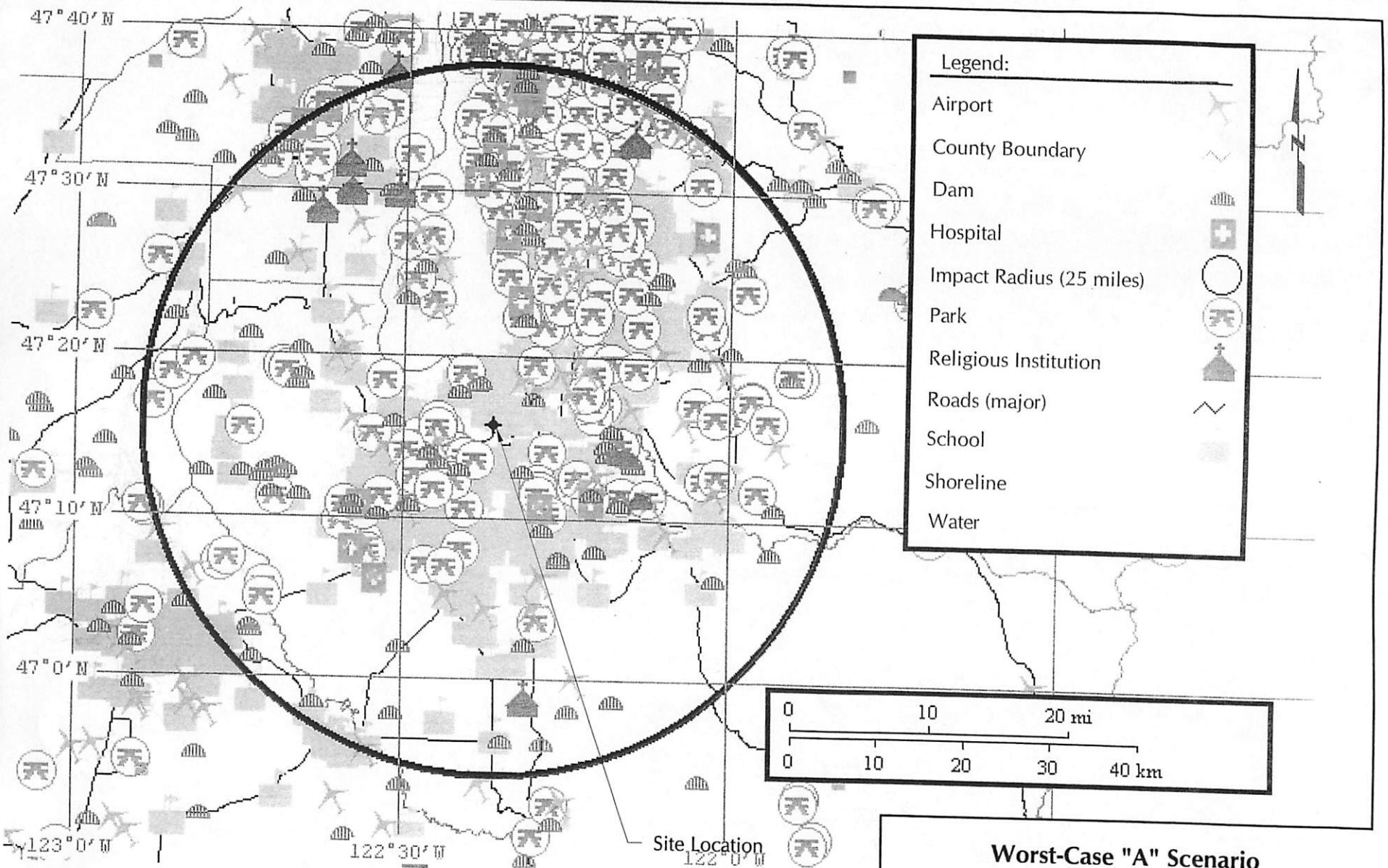
RMP*Comp Ver. 1.07
Results of Consequence Analysis

Chemical: Sulfur dioxide (anhydrous)
CAS #: 7446-09-5
Category: Toxic Gas
Scenario: Alternative
Liquefied under pressure
Release Duration: 10 minutes
Release Rate: .25 pounds per min
Mitigation Measures: Release in enclosed space, in direct contact with outside air

Topography: Rural surroundings (terrain generally flat and unobstructed)
Toxic Endpoint: 0.0078 mg/L; basis: ERPG-2
Estimated Distance to Toxic Endpoint: <0.1 miles (<0.16 kilometers); report as 0.1 mile

--------Assumptions About This Scenario---------
Wind Speed: 3 meters/second (6.7 miles/hour)
Stability Class: D
Air Temperature: 77 degrees F (25 degrees C)

MARPLOT Figures



Marplot Source:
Computer Aided Management of Emergency Operations

Receptor Location Source:
Geographical Names Information System Database

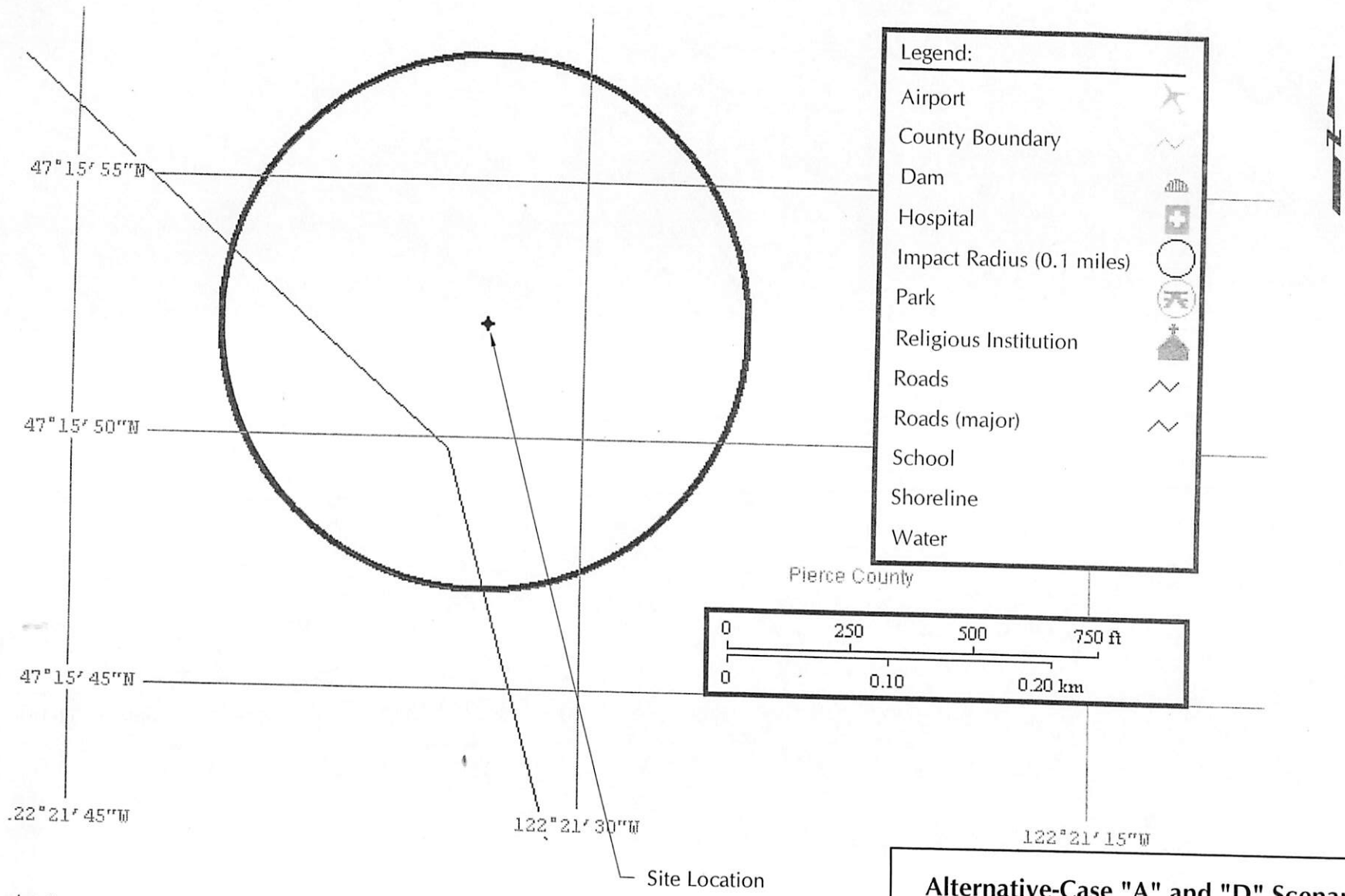
Worst-Case "A" Scenario
Tacoma, Washington Facility

Jones Chemical, Inc., Caledonia New York

LFR LEVINE•FRICKE

Figure 19

Tacoma.dwg, WA Tacoma Worst, 06/10/2004 09:49:10 AM



Marplot Source:
Computer Aided Management of Emergency Operations

Receptor Location Source:
Geographical Names Information System Database

Alternative-Case "A" and "D" Scenarios
Tacoma, Washington Facility

Jones Chemical, Inc., Caledonia New York

LFR LEVINE•FRICKE

Figure 20

I:\Design\001\0925210\000\DWG\WA Tacoma.dwg, 06/10/2004 01:13:11 PM, 8.5x11 LEF

Demographic Snapshot

Worst-Case "A" Scenario, Tacoma, Washington

Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
Population		
2009 Projection	1,983,269	
2004 Estimate	1,889,626	
2000 Census	1,811,288	
1990 Census	1,530,767	
Growth 2004-2009	4.96%	
Growth 2000-2004	4.32%	
Growth 1990-2000	18.33%	
2004 Est. Population by Single Race Classification	1,889,626	
White Alone	1,362,580	72.11
Black or African American Alone	141,680	7.50
American Indian and Alaska Native Alone	24,672	1.31
Asian Alone	182,479	9.66
Native Hawaiian and Other Pacific Islander Alone	15,651	0.83
Some Other Race Alone	60,272	3.19
Two or More Races	102,291	5.41
2004 Est. Population Hispanic or Latino by Origin*	1,889,626	
Not Hispanic or Latino	1,754,335	92.84
Hispanic or Latino:	135,291	7.16
Mexican	88,739	65.59
Puerto Rican	9,963	7.36
Cuban	2,094	1.55
All Other Hispanic or Latino	34,494	25.50
2004 Est. Hispanic or Latino by Single Race Class.	135,291	
White Alone	54,995	40.65
Black or African American Alone	3,858	2.85
American Indian and Alaska Native Alone	2,803	2.07
Asian Alone	1,634	1.21
Native Hawaiian and Other Pacific Islander Alone	565	0.42
Some Other Race Alone	55,359	40.92
Two or More Races	16,075	11.88

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Pop. Asian Alone Race by Category*	182,479	
Chinese, except Taiwanese	29,473	16.15
Filipino	38,485	21.09
Japanese	18,415	10.09
Asian Indian	10,664	5.84
Korean	27,022	14.81
Vietnamese	30,527	16.73
Cambodian	9,732	5.33
Hmong	630	0.35
Laotian	5,427	2.97
Thai	1,768	0.97
Other Asian	5,489	3.01
Two or more Asian categories	4,848	2.66
2004 Est. Population by Ancestry	1,889,626	
Pop, Arab	3,876	0.21
Pop, Czech	6,641	0.35
Pop, Danish	12,244	0.65
Pop, Dutch	18,783	0.99
Pop, English	125,455	6.64
Pop, French (except Basque)	35,612	1.88
Pop, French Canadian	12,359	0.65
Pop, German	216,743	11.47
Pop, Greek	4,661	0.25
Pop, Hungarian	3,964	0.21
Pop, Irish	123,489	6.54
Pop, Italian	52,106	2.76
Pop, Lithuanian	1,814	0.10
Pop, United States or American	88,351	4.68
Pop, Norwedian	84,330	4.46
Pop, Polish	23,159	1.23
Pop, Portuguese	4,345	0.23
Pop, Russian	13,128	0.69
Pop, Scottish	31,133	1.65
Pop, Scotch-Irish	25,638	1.36
Pop, Slovak	1,142	0.06
Pop, Subsaharan African	17,836	0.94
Pop, Swedish	37,971	2.01
Pop, Swiss	6,230	0.33
Pop, Ukrainian	10,186	0.54
Pop, Welsh	8,756	0.46
Pop, West Indian (exc Hisp groups)	2,638	0.14

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington

Order #: 962972842

Site: 01

Project Code:

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Population by Ancestry		
Pop, Other ancestries	561,632	29.72
Pop, Ancestry Unclassified	355,403	18.81
	1,763,688	
2004 Est. Pop Age 5+ by Language Spoken At Home		
Speak Only English at Home	1,477,153	83.75
Speak Asian/Pacific Islander Language at Home	132,674	7.52
Speak IndoEuropean Language at Home	64,011	3.63
Speak Spanish at Home	76,314	4.33
Speak Other Language at Home	13,537	0.77
	1,889,626	
2004 Est. Population by Sex		
Male	944,894	50.00
Female	944,732	50.00
Male/Female Ratio	1.00	
	1,889,626	
2004 Est. Population by Age		
Age 0 - 4	125,937	6.66
Age 5 - 9	127,980	6.77
Age 10 - 14	133,758	7.08
Age 15 - 17	82,150	4.35
Age 18 - 20	76,580	4.05
Age 21 - 24	95,627	5.06
Age 25 - 34	276,138	14.61
Age 35 - 44	314,079	16.62
Age 45 - 49	150,293	7.95
Age 50 - 54	131,309	6.95
Age 55 - 59	106,012	5.61
Age 60 - 64	74,155	3.92
Age 65 - 74	99,388	5.26
Age 75 - 84	69,834	3.70
Age 85 and over	26,388	1.40
	1,474,307	78.02
Age 16 and over	1,419,800	75.14
Age 18 and over	1,343,220	71.08
Age 21 and over	195,609	10.35
Age 65 and over		
	35.85	
2004 Est. Median Age	36.26	
2004 Est. Average Age		

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Male Population by Age	944,894	
Age 0 - 4	64,372	6.81
Age 5 - 9	65,655	6.95
Age 10 - 14	68,660	7.27
Age 15 - 17	42,165	4.46
Age 18 - 20	39,808	4.21
Age 21 - 24	49,461	5.23
Age 25 - 34	141,199	14.94
Age 35 - 44	160,113	16.95
Age 45 - 49	75,432	7.98
Age 50 - 54	64,988	6.88
Age 55 - 59	52,551	5.56
Age 60 - 64	36,895	3.90
Age 65 - 74	46,805	4.95
Age 75 - 84	28,418	3.01
Age 85 and over	8,372	0.89
2004 Est. Median Age, Male	35.07	
2004 Est. Average Age, Male	35.34	
2004 Est. Female Population by Age	944,732	
Age 0 - 4	61,566	6.52
Age 5 - 9	62,325	6.60
Age 10 - 14	65,098	6.89
Age 15 - 17	39,985	4.23
Age 18 - 20	36,772	3.89
Age 21 - 24	46,166	4.89
Age 25 - 34	134,939	14.28
Age 35 - 44	153,965	16.30
Age 45 - 49	74,861	7.92
Age 50 - 54	66,320	7.02
Age 55 - 59	53,461	5.66
Age 60 - 64	37,260	3.94
Age 65 - 74	52,583	5.57
Age 75 - 84	41,415	4.38
Age 85 and over	18,016	1.91
2004 Est. Median Age, Female	36.66	
2004 Est. Average Age, Female	37.19	

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Population Age 15+ by Marital Status*	1,501,950	
Total, Never Married	415,572	27.67
Married, Spouse present	760,078	50.61
Married, Spouse absent	68,669	4.57
Widowed	75,240	5.01
Divorced	182,391	12.14
Males, Never Married	235,050	15.65
Previously Married	107,166	7.14
Females, Never Married	180,522	12.02
Previously Married	177,319	11.81
2004 Est. Pop. Age 25+ by Educational Attainment*	1,247,593	
Less than 9th grade	51,306	4.11
Some High School, no diploma	109,383	8.77
High School Graduate (or GED)	321,928	25.80
Some College, no degree	332,084	26.62
Associate Degree	100,378	8.05
Bachelor's Degree	227,206	18.21
Master's Degree	71,722	5.75
Professional School Degree	23,866	1.91
Doctorate Degree	9,720	0.78
Households		
2009 Projection	769,241	
2004 Estimate	732,229	
2000 Census	701,406	
1990 Census	590,042	
Growth 2004-2009	5.05%	
Growth 2000-2004	4.39%	
Growth 1990-2000	18.87%	
2004 Est. Households by Household Type*	732,229	
Family Households	469,614	64.13
Nonfamily Households	262,615	35.87
2004 Est. Group Quarters Population*	45,652	
2004 Households by Ethnicity, Hispanic/Latino	36,522	4.99

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington

Order #: 962972842

Project Code:

Site: 01

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Households by Household Income	732,229	
Income Less than $15,000	86,868	11.86
Income $15,000 - $24,999	72,353	9.88
Income $25,000 - $34,999	86,036	11.75
Income $35,000 - $49,999	115,101	15.72
Income $50,000 - $74,999	154,576	21.11
Income $75,000 - $99,999	98,407	13.44
Income $100,000 - $149,999	75,873	10.36
Income $150,000 - $249,999	30,902	4.22
Income $250,000 - $499,999	8,361	1.14
Income $500,000 and more	3,754	0.51
2004 Est. Average Household Income	$65,469	
2004 Est. Median Household Income	$50,931	
2004 Est. Per Capita Income	$25,764	
2004 Est. Household Type, Presence Own Children*	732,229	
Single Male Householder	98,770	13.49
Single Female Householder	104,380	14.26
Married-Couple Family, own children	168,234	22.98
Married-Couple Family, no own children	190,563	26.03
Male Householder, own children	17,788	2.43
Male Householder, no own children	13,827	1.89
Female Householder, own children	51,377	7.02
Female Householder, no own children	27,825	3.80
Nonfamily, Male Householder	34,804	4.75
Nonfamily, Female Householder	24,662	3.37
2004 Est. Households by Household Size*	732,229	
1-person household	203,149	27.74
2-person household	239,374	32.69
3-person household	117,855	16.10
4-person household	100,048	13.66
5-person household	44,139	6.03
6-person household	16,851	2.30
7 or more person household	10,814	1.48
2004 Est. Average Household Size*	2.52	

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Households by Presence of People*	732,229	
Households with 1 or more People Age 18 or under:		
Married-Couple Family	175,903	24.02
Other Family, Male Householder	20,140	2.75
Other Family, Female Householder	57,389	7.84
Nonfamily, Male Householder	2,841	0.39
Nonfamily, Female Householder	846	0.12
Households no People Age 18 or under:		
Married-Couple Family	182,894	24.98
Other Family, Male Householder	11,475	1.57
Other Family, Female Householder	21,813	2.98
Nonfamily, Male Householder	130,733	17.85
Nonfamily, Female Householder	128,196	17.51
2004 Est. Households by Number of Vehicles*	732,229	
No Vehicles	67,611	9.23
1 Vehicle	240,258	32.81
2 Vehicles	276,705	37.79
3 Vehicles	103,717	14.16
4 Vehicles	29,730	4.06
5 or more Vehicles	14,208	1.94
2004 Est. Average Number of Vehicles*	1.79	
Family Households		
2009 Projection	489,652	
2004 Estimate	469,614	
2000 Census	452,575	
1990 Census	391,882	
Growth 2004-2009	4.27%	
Growth 2000-2004	3.76%	
Growth 1990-2000	15.49%	

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Family Households by Household Income	469,614	
Income Less than $15,000	30,435	6.48
Income $15,000 - $24,999	33,415	7.12
Income $25,000 - $34,999	42,796	9.11
Income $35,000 - $49,999	67,645	14.40
Income $50,000 - $74,999	112,388	23.93
Income $75,000 - $99,999	81,903	17.44
Income $100,000 - $149,999	66,065	14.07
Income $150,000 - $249,999	25,051	5.33
Income $250,000 - $499,999	6,764	1.44
Income $500,000 and more	3,153	0.67
2004 Est. Average Family Household Income	$76,988	
2004 Est. Median Family Household Income	$63,462	
2004 Est. Families by Poverty Status*	469,614	
Income At or Above Poverty Level:		
Married-Couple Family, own children	169,651	36.13
Married-Couple Family, no own children	176,542	37.59
Male Householder, own children	17,233	3.67
Male Householder, no own children	9,999	2.13
Female Householder, own children	41,761	8.89
Female Householder, no own children	19,666	4.19
Income Below Poverty Level:		
Married-Couple Family, own children	8,369	1.78
Married-Couple Family, no own children	4,235	0.90
Male Householder, own children	3,362	0.72
Male Householder, no own children	1,021	0.22
Female Householder, own children	16,569	3.53
Female Householder, no own children	1,206	0.26
2004 Est. Pop Age 16+ by Employment Status*	1,474,307	
In Armed Forces	23,323	1.58
Civilian - Employed	922,143	62.55
Civilian - Unemployed	55,359	3.75
Not in Labor Force	473,482	32.12

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Civ Employed Pop 16+ Class of Worker*	922,143	
For-Profit Private Workers	662,822	71.88
Non-Profit Private Workers	61,394	6.66
Local Government Workers	55,810	6.05
State Government Workers	50,289	5.45
Federal Government Workers	34,257	3.71
Self-Emp Workers	55,403	6.01
Unpaid Family Workers	2,169	0.24
2004 Est. Civ Employed Pop 16+ by Occupation*	922,143	
Management, Business, and Financial Operations	129,582	14.05
Professional and Related Occupations	185,739	20.14
Service	139,929	15.17
Sales and Office	250,267	27.14
Farming, Fishing, and Forestry	3,612	0.39
Construction, Extraction and Maintainance	87,987	9.54
Production, Transportation and Material Moving	125,027	13.56
2004 Est. Pop 16+ by Occupation Classification*	922,143	
Blue Collar	213,014	23.10
White Collar	564,805	61.25
Service and Farm	144,324	15.65
2004 Est. Workers Age 16+, Transportation To Work*	924,421	
Drove Alone	664,960	71.93
Car Pooled	122,123	13.21
Public Transportation	59,016	6.38
Walked	32,023	3.46
Motorcycle	1,562	0.17
Bicycle	3,743	0.40
Other Means	6,649	0.72
Worked at Home	34,345	3.72
2004 Est. Workers Age 16+ by Travel Time to Work*	890,076	
Less than 15 Minutes	196,438	22.07
15 - 29 Minutes	326,366	36.67
30 - 44 Minutes	200,907	22.57
45 - 59 Minutes	80,313	9.02
60 or more Minutes	86,054	9.67
2004 Est. Average Travel Time to Work in Minutes*	30.56	

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Tenure of Occupied Housing Units*	732,229	
Owner Occupied	446,652	61.00
Renter Occupied	285,577	39.00
2004 Occ Housing Units, Avg Length of Residence	12	
2004 Est. All Owner-Occupied Housing Values	446,652	
Value Less than $20,000	7,132	1.60
Value $20,000 - $39,999	5,840	1.31
Value $40,000 - $59,999	5,924	1.33
Value $60,000 - $79,999	7,951	1.78
Value $80,000 - $99,999	12,531	2.81
Value $100,000 - $149,999	74,376	16.65
Value $150,000 - $199,999	115,432	25.84
Value $200,000 - $299,999	125,083	28.00
Value $300,000 - $399,999	44,146	9.88
Value $400,000 - $499,999	23,506	5.26
Value $500,000 - $749,999	13,470	3.02
Value $750,000 - $999,999	6,718	1.50
Value $1,000,000 or more	4,544	1.02
2004 Est. Median All Owner-Occupied Housing Value	$197,462	
2004 Est. Housing Units by Units in Structure*	771,187	
1 Unit Attached	26,831	3.48
1 Unit Detached	452,296	58.65
2 Units	18,391	2.38
3 to 19 Units	124,750	16.18
20 to 49 Units	45,669	5.92
50 or More Units	56,242	7.29
Mobile Home or Trailer	45,045	5.84
Boat, RV, Van, etc.	1,963	0.25

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Pop-Facts: Demographic Snapshot

Prepared For: Worst-Case "A" Scenario, Tacoma, Washington **Order #: 962972842**

Project Code: **Site: 01**

Column 1: 0.00-25.00 Miles, Total

Description	Column 1	Pct.
2004 Est. Housing Units by Year Structure Built*	771,187	
Housing Unit Built 1999 to present	64,480	8.36
Housing Unit Built 1995 to 1998	56,070	7.27
Housing Unit Built 1990 to 1994	69,387	9.00
Housing Unit Built 1980 to 1989	127,804	16.57
Housing Unit Built 1970 to 1979	133,708	17.34
Housing Unit Built 1960 to 1969	106,113	13.76
Housing Unit Built 1950 to 1959	73,099	9.48
Housing Unit Built 1940 to 1949	48,965	6.35
Housing Unit Built 1939 or Earlier	91,561	11.87
2004 Est. Median Year Structure Built*	1975	

*In contrast to Claritas Demographic Estimates, "smoothed" data items are Census 2000 tables made consistent with current year estimated and 5 year projected base counts.

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Appendix: Area Listing

Area Name:

Type: Radius Reporting Detail: Aggregate Reporting Level: Block Group

Radius Definition:

Center Point: 47.264583 -122.359139

Circle/Band: 0.00 - 25.00

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Demographic Snapshot

Alternate-Case "A" and "D" Scenarios, Tacoma, Washington

Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
Population		
2009 Projection	0	
2004 Estimate	0	
2000 Census	0	
1990 Census	0	
Growth 2004-2009	0.00%	
Growth 2000-2004	0.00%	
Growth 1990-2000	0.00%	
2004 Est. Population by Single Race Classification	0	
White Alone	0	0.00
Black or African American Alone	0	0.00
American Indian and Alaska Native Alone	0	0.00
Asian Alone	0	0.00
Native Hawaiian and Other Pacific Islander Alone	0	0.00
Some Other Race Alone	0	0.00
Two or More Races	0	0.00
2004 Est. Population Hispanic or Latino by Origin*	0	
Not Hispanic or Latino	0	0.00
Hispanic or Latino:	0	0.00
Mexican	0	0.00
Puerto Rican	0	0.00
Cuban	0	0.00
All Other Hispanic or Latino	0	0.00
2004 Est. Hispanic or Latino by Single Race Class.	0	
White Alone	0	0.00
Black or African American Alone	0	0.00
American Indian and Alaska Native Alone	0	0.00
Asian Alone	0	0.00
Native Hawaiian and Other Pacific Islander Alone	0	0.00
Some Other Race Alone	0	0.00
Two or More Races	0	0.00

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Pop. Asian Alone Race by Category*	0	
Chinese, except Taiwanese	0	0.00
Filipino	0	0.00
Japanese	0	0.00
Asian Indian	0	0.00
Korean	0	0.00
Vietnamese	0	0.00
Cambodian	0	0.00
Hmong	0	0.00
Laotian	0	0.00
Thai	0	0.00
Other Asian	0	0.00
Two or more Asian categories	0	0.00
2004 Est. Population by Ancestry	0	
Pop, Arab	0	0.00
Pop, Czech	0	0.00
Pop, Danish	0	0.00
Pop, Dutch	0	0.00
Pop, English	0	0.00
Pop, French (except Basque)	0	0.00
Pop, French Canadian	0	0.00
Pop, German	0	0.00
Pop, Greek	0	0.00
Pop, Hungarian	0	0.00
Pop, Irish	0	0.00
Pop, Italian	0	0.00
Pop, Lithuanian	0	0.00
Pop, United States or American	0	0.00
Pop, Norwedian	0	0.00
Pop, Polish	0	0.00
Pop, Portuguese	0	0.00
Pop, Russian	0	0.00
Pop, Scottish	0	0.00
Pop, Scotch-Irish	0	0.00
Pop, Slovak	0	0.00
Pop, Subsaharan African	0	0.00
Pop, Swedish	0	0.00
Pop, Swiss	0	0.00
Pop, Ukrainian	0	0.00
Pop, Welsh	0	0.00
Pop, West Indian (exc Hisp groups)	0	0.00

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Population by Ancestry		
Pop, Other ancestries	0	0.00
Pop, Ancestry Unclassified	0	0.00
2004 Est. Pop Age 5+ by Language Spoken At Home		
Speak Only English at Home	0	
Speak Asian/Pacific Islander Language at Home	0	0.00
Speak IndoEuropean Language at Home	0	0.00
Speak Spanish at Home	0	0.00
Speak Other Language at Home	0	0.00
2004 Est. Population by Sex		
Male	0	
Female	0	0.00
Male/Female Ratio	0	0.00
	0.00	
2004 Est. Population by Age		
Age 0 - 4	0	
Age 5 - 9	0	0.00
Age 10 - 14	0	0.00
Age 15 - 17	0	0.00
Age 18 - 20	0	0.00
Age 21 - 24	0	0.00
Age 25 - 34	0	0.00
Age 35 - 44	0	0.00
Age 45 - 49	0	0.00
Age 50 - 54	0	0.00
Age 55 - 59	0	0.00
Age 60 - 64	0	0.00
Age 65 - 74	0	0.00
Age 75 - 84	0	0.00
Age 85 and over	0	0.00
Age 16 and over	0	0.00
Age 18 and over	0	0.00
Age 21 and over	0	0.00
Age 65 and over	0	0.00
2004 Est. Median Age	0.00	
2004 Est. Average Age	0.00	

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Male Population by Age	0	
Age 0 - 4	0	0.00
Age 5 - 9	0	0.00
Age 10 - 14	0	0.00
Age 15 - 17	0	0.00
Age 18 - 20	0	0.00
Age 21 - 24	0	0.00
Age 25 - 34	0	0.00
Age 35 - 44	0	0.00
Age 45 - 49	0	0.00
Age 50 - 54	0	0.00
Age 55 - 59	0	0.00
Age 60 - 64	0	0.00
Age 65 - 74	0	0.00
Age 75 - 84	0	0.00
Age 85 and over	0	0.00
2004 Est. Median Age, Male	0.00	
2004 Est. Average Age, Male	0.00	
2004 Est. Female Population by Age	0	
Age 0 - 4	0	0.00
Age 5 - 9	0	0.00
Age 10 - 14	0	0.00
Age 15 - 17	0	0.00
Age 18 - 20	0	0.00
Age 21 - 24	0	0.00
Age 25 - 34	0	0.00
Age 35 - 44	0	0.00
Age 45 - 49	0	0.00
Age 50 - 54	0	0.00
Age 55 - 59	0	0.00
Age 60 - 64	0	0.00
Age 65 - 74	0	0.00
Age 75 - 84	0	0.00
Age 85 and over	0	0.00
2004 Est. Median Age, Female	0.00	
2004 Est. Average Age, Female	0.00	

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA

Order #: 962978556

Project Code:

Site: 01

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Population Age 15+ by Marital Status*	0	
Total, Never Married	0	0.00
Married, Spouse present	0	0.00
Married, Spouse absent	0	0.00
Widowed	0	0.00
Divorced	0	0.00
Males, Never Married	0	0.00
Previously Married	0	0.00
Females, Never Married	0	0.00
Previously Married	0	0.00
2004 Est. Pop. Age 25+ by Educational Attainment*	0	
Less than 9th grade	0	0.00
Some High School, no diploma	0	0.00
High School Graduate (or GED)	0	0.00
Some College, no degree	0	0.00
Associate Degree	0	0.00
Bachelor's Degree	0	0.00
Master's Degree	0	0.00
Professional School Degree	0	0.00
Doctorate Degree	0	0.00
Households	0	
2009 Projection	0	
2004 Estimate	0	
2000 Census	0	
1990 Census	0	
Growth 2004-2009	0.00%	
Growth 2000-2004	0.00%	
Growth 1990-2000	0.00%	
2004 Est. Households by Household Type*	0	
Family Households	0	0.00
Nonfamily Households	0	0.00
2004 Est. Group Quarters Population*	0	
2004 Households by Ethnicity, Hispanic/Latino	0	0.00

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Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Households by Household Income	0	
Income Less than $15,000	0	0.00
Income $15,000 - $24,999	0	0.00
Income $25,000 - $34,999	0	0.00
Income $35,000 - $49,999	0	0.00
Income $50,000 - $74,999	0	0.00
Income $75,000 - $99,999	0	0.00
Income $100,000 - $149,999	0	0.00
Income $150,000 - $249,999	0	0.00
Income $250,000 - $499,999	0	0.00
Income $500,000 and more	0	0.00
2004 Est. Average Household Income	$0	
2004 Est. Median Household Income	$0	
2004 Est. Per Capita Income	$0	
2004 Est. Household Type, Presence Own Children*	0	
Single Male Householder	0	0.00
Single Female Householder	0	0.00
Married-Couple Family, own children	0	0.00
Married-Couple Family, no own children	0	0.00
Male Householder, own children	0	0.00
Male Householder, no own children	0	0.00
Female Householder, own children	0	0.00
Female Householder, no own children	0	0.00
Nonfamily, Male Householder	0	0.00
Nonfamily, Female Householder	0	0.00
2004 Est. Households by Household Size*	0	
1-person household	0	0.00
2-person household	0	0.00
3-person household	0	0.00
4-person household	0	0.00
5-person household	0	0.00
6-person household	0	0.00
7 or more person household	0	0.00
2004 Est. Average Household Size*	0.00	

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Households by Presence of People*	0	
Households with 1 or more People Age 18 or under:		
Married-Couple Family	0	0.00
Other Family, Male Householder	0	0.00
Other Family, Female Householder	0	0.00
Nonfamily, Male Householder	0	0.00
Nonfamily, Female Householder	0	0.00
Households no People Age 18 or under:		
Married-Couple Family	0	0.00
Other Family, Male Householder	0	0.00
Other Family, Female Householder	0	0.00
Nonfamily, Male Householder	0	0.00
Nonfamily, Female Householder	0	0.00
2004 Est. Households by Number of Vehicles*	0	
No Vehicles	0	0.00
1 Vehicle	0	0.00
2 Vehicles	0	0.00
3 Vehicles	0	0.00
4 Vehicles	0	0.00
5 or more Vehicles	0	0.00
2004 Est. Average Number of Vehicles*	0.00	
Family Households		
2009 Projection	0	
2004 Estimate	0	
2000 Census	0	
1990 Census	0	
Growth 2004-2009	0.00%	
Growth 2000-2004	0.00%	
Growth 1990-2000	0.00%	

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Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Family Households by Household Income	0	
Income Less than $15,000	0	0.00
Income $15,000 - $24,999	0	0.00
Income $25,000 - $34,999	0	0.00
Income $35,000 - $49,999	0	0.00
Income $50,000 - $74,999	0	0.00
Income $75,000 - $99,999	0	0.00
Income $100,000 - $149,999	0	0.00
Income $150,000 - $249,999	0	0.00
Income $250,000 - $499,999	0	0.00
Income $500,000 and more	0	0.00
2004 Est. Average Family Household Income	$0	
2004 Est. Median Family Household Income	$0	
2004 Est. Families by Poverty Status*	0	
Income At or Above Poverty Level:		
Married-Couple Family, own children	0	0.00
Married-Couple Family, no own children	0	0.00
Male Householder, own children	0	0.00
Male Householder, no own children	0	0.00
Female Householder, own children	0	0.00
Female Householder, no own children	0	0.00
Income Below Poverty Level:		
Married-Couple Family, own children	0	0.00
Married-Couple Family, no own children	0	0.00
Male Householder, own children	0	0.00
Male Householder, no own children	0	0.00
Female Householder, own children	0	0.00
Female Householder, no own children	0	0.00
2004 Est. Pop Age 16+ by Employment Status*	0	
In Armed Forces	0	0.00
Civilian - Employed	0	0.00
Civilian - Unemployed	0	0.00
Not in Labor Force	0	0.00

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Civ Employed Pop 16+ Class of Worker*	0	
For-Profit Private Workers	0	0.00
Non-Profit Private Workers	0	0.00
Local Government Workers	0	0.00
State Government Workers	0	0.00
Federal Government Workers	0	0.00
Self-Emp Workers	0	0.00
Unpaid Family Workers	0	0.00
2004 Est. Civ Employed Pop 16+ by Occupation*	0	
Management, Business, and Financial Operations	0	0.00
Professional and Related Occupations	0	0.00
Service	0	0.00
Sales and Office	0	0.00
Farming, Fishing, and Forestry	0	0.00
Construction, Extraction and Maintainance	0	0.00
Production, Transportation and Material Moving	0	0.00
2004 Est. Pop 16+ by Occupation Classification*	0	
Blue Collar	0	0.00
White Collar	0	0.00
Service and Farm	0	0.00
2004 Est. Workers Age 16+, Transportation To Work*	0	
Drove Alone	0	0.00
Car Pooled	0	0.00
Public Transportation	0	0.00
Walked	0	0.00
Motorcycle	0	0.00
Bicycle	0	0.00
Other Means	0	0.00
Worked at Home	0	0.00
2004 Est. Workers Age 16+ by Travel Time to Work*	0	
Less than 15 Minutes	0	0.00
15 - 29 Minutes	0	0.00
30 - 44 Minutes	0	0.00
45 - 59 Minutes	0	0.00
60 or more Minutes	0	0.00
2004 Est. Average Travel Time to Work in Minutes*	0.00	

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Tenure of Occupied Housing Units*	0	
Owner Occupied	0	0.00
Renter Occupied	0	0.00
2004 Occ Housing Units, Avg Length of Residence	0	
2004 Est. All Owner-Occupied Housing Values	0	
Value Less than $20,000	0	0.00
Value $20,000 - $39,999	0	0.00
Value $40,000 - $59,999	0	0.00
Value $60,000 - $79,999	0	0.00
Value $80,000 - $99,999	0	0.00
Value $100,000 - $149,999	0	0.00
Value $150,000 - $199,999	0	0.00
Value $200,000 - $299,999	0	0.00
Value $300,000 - $399,999	0	0.00
Value $400,000 - $499,999	0	0.00
Value $500,000 - $749,999	0	0.00
Value $750,000 - $999,999	0	0.00
Value $1,000,000 or more	0	0.00
2004 Est. Median All Owner-Occupied Housing Value	$0	
2004 Est. Housing Units by Units in Structure*	0	
1 Unit Attached	0	0.00
1 Unit Detached	0	0.00
2 Units	0	0.00
3 to 19 Units	0	0.00
20 to 49 Units	0	0.00
50 or More Units	0	0.00
Mobile Home or Trailer	0	0.00
Boat, RV, Van, etc.	0	0.00

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Pop-Facts: Demographic Snapshot

Prepared For: Alternative-Case "A" & "D" Scenarios, Tacoma, WA **Order #: 962978556**

Project Code: **Site: 01**

Column 1: 0.00-0.10 Miles, Total

Description	Column 1	Pct.
2004 Est. Housing Units by Year Structure Built*	0	
Housing Unit Built 1999 to present	0	0.00
Housing Unit Built 1995 to 1998	0	0.00
Housing Unit Built 1990 to 1994	0	0.00
Housing Unit Built 1980 to 1989	0	0.00
Housing Unit Built 1970 to 1979	0	0.00
Housing Unit Built 1960 to 1969	0	0.00
Housing Unit Built 1950 to 1959	0	0.00
Housing Unit Built 1940 to 1949	0	0.00
Housing Unit Built 1939 or Earlier	0	0.00
2004 Est. Median Year Structure Built*	0	

*In contrast to Claritas Demographic Estimates, "smoothed" data items are Census 2000 tables made consistent with current year estimated and 5 year projected base counts.

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Appendix: Area Listing

Area Name:

Type: Radius Reporting Detail: Aggregate Reporting Level: Block Group

Radius Definition:

Center Point: 47.264583 -122.359139

Circle/Band: 0.00 - 0.10

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SITEREPORTS

RECEIVED
AUG 23 2004
Environmental Cleanup Office

RMP WORSE-CASE AND ALTERNATIVE-CASE RELEASE SCENARIOS		
BRANCH	WORSE-CASE SCENARIO	ALTERNATIVE-CASE SCENARIOS
Barberton, OH	A	A, B
Beech Grove, IN	A	A, B
Caledonia, NY	A	A, B
Charlotte, NC	A	A, B
Fort Lauderdale, FL	B	C, D
Jacksonville, FL	A	A, B
Merrimack, NH	A	A, D
Milford, VA	A	A, D
Riverview, MI	A	A, B
Tacoma, WA	A	A, D
Warwick, NY	A	A, B

WORSE-CASE SCENARIOS

A: Entire contents of 180,000 pound railcar of Chlorine

B. Entire contents of 2,000 pound container of Chlorine

ALTERNATIVE-CASE SCENARIOS

A: Less than 1 pound release of chlorine as a result of employee failing to ensure a proper connection prior to beginning the filling process at the chlorine cylinder filling station.

B: Less than 1 pound release of sulfur dioxide as a result of employee failing to ensure a proper connection prior to beginning the filling process at the sulfur dioxide cylinder filling station.

C: Trace release of chlorine due to an improperly closed cylinder valve while the container is in storage.

D: Trace release of sulfur dioxide due to an improperly closed cylinder valve while the container is in storage.