

**OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
PERSONNEL AND READINESS**

CHEMICAL WEAPONS EXPOSURE STUDY UPDATE

JULY 1993

Prepared for:

**Staff & Members
House Committee on Veterans' Affairs**

Prepared by:

**Office of the Director, Information Resources Management
Office of the Assistant Secretary of Defense
(Personnel & Readiness)**

(703)696-8710

OASD (P&R)

DEPARTMENT OF DEFENSE

CHEMICAL WEAPONS EXPOSURE STUDY

UPDATE FOR JULY 1993

SECTION ONE

CHEMICAL WEAPONS SITE LOCATION DATABASE

SECTION TWO

CHEMICAL WEAPONS TEST DOCUMENT REPOSITORIES

SECTION THREE

CHEMICAL WEAPONS EXPOSURE PERSONNEL DATABASE

SECTION FOUR

ATTACHMENTS

SECTION ONE

CHEMICAL WEAPONS SITE LOCATION DATABASE

SUMMARY

CHEMICAL WEAPONS EXPOSURE SITE DATABASE

The attached Site Location Database Summary was compiled by the Chemical Warfare/Chemical and Biological Defense Information Analysis Center (CBIAC). CBIAC is under the direction of Defense Technical Information Center (DTIC).

The Database Summary includes 117 entries, some of which are duplicate due to names changes or reorganizations (example: Camp Detrick is listed, as is the current organization Fort Detrick).

The sites where most of the testing using human subjects was conducted, and where most of the records originated or are still stored are:

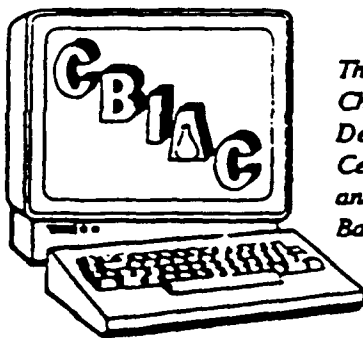
- Edgewood Arsenal, MD
- Dugway Proving Ground, UT
- Naval Research Laboratory, MD
- Fort Detrick, MD
- Fort McClellan, AL

Sites where field testing was conducted, or where documented incidents of exposure have been found, are listed below. The sites with an asterisk denote sites that are no longer in use:

- *Bushnell Field, FL
- *San Jose Island, Panama (also listed as Fort Clayton)
- *Camp Sibert, AL
- Huntsville Arsenal, AL
- *Horn Island Installation, MS
- Tooele Army Depot, UT
- Great Lakes Naval Training Center, IL

REPORT

CW
SITE LOCATION
DATABASE
SUMMARY



*The Chemical Warfare/
Chemical and Biological
Defense Information Analysis
Center is a DoD information
analysis center operated by
Battelle Memorial Institute*

SITE NAME	OWNER/OPERATION	CITY	STATE	COUNTRY	ACTIVITY	REMARKS	SITE ID
COLTS WEEK NAVAL PIER	NAVY	EARLE	NJ	UNITED STATES	TRANSPORT		ENJ
CRANE ARMY AMMUNITION ACTIVITY	ARMY		IA	UNITED STATES	TRANSPORT		CAMA
CRANE NAVAL AMMUNITION DEPOT	NAVY	CRANE	IN	UNITED STATES	TRANSPORT		CHAD
DESERET CHEMICAL WARFARE DEPOT			UT	UNITED STATES	TRANSPORT, STORAGE		DESERET
DOW CHEMICAL COMPANY	INDUSTRIAL	PITTSBURG	CA	UNITED STATES	TRANSPORT		DOV
DUCRAY PROVING GROUND	ARMY		UT	UNITED STATES	TRANSPORT, ROTAE	H	DPO
EDGEWOOD ARSENAL	ARMY	EDGEWOOD	MD	UNITED STATES	TRANSPORT, STORAGE, PRODUCTION, ROTAE	H	EA
EL TORO MARINE CORPS AIR STATION	MARINE CORPS		CA	UNITED STATES	TRANSPORT		TORO
ELWOOD AIR FORCE BASE	AIR FORCE		AK	UNITED STATES	TRANSPORT		ELW
ENVIRONMENTAL TECHNOLOGIES GROUP, INC.	OTHER	BALTIMORE	MD	UNITED STATES	ROTAE		
FALLON NAVAL AIR STATION	NAVY		WV	UNITED STATES	TRANSPORT		FALL
FIRELANDS PLANT	ARMY	FOSTORIA	OH	UNITED STATES	PRODUCTION		
FORT BRAGO	ARMY		NC	UNITED STATES	TRANSPORT		BRAG
FORT CHURCHILL		RIVERS		MANITOBA CANADA	TRANSPORT		FCA
FORT CLAYTON	ARMY			PANAMA CANAL ZONE	TRANSPORT, ROTAE	TROPICAL TEST CENTER H	CZ
FORT DETRICK	ARMY		MD	UNITED STATES	ROTAE, SPECIAL PROJECTS	FORMERLY KNOWN AS CAMP DETRICK H	CAMP DETRICK
FORT GREELY	ARMY		AK	UNITED STATES	TRANSPORT, ROTAE	ARCTIC TEST CENTER H	OAK
FORT MCLELLAN	ARMY	GLASDEN	AL	UNITED STATES	TRANSPORT, STORAGE, TRAINING	FORMERLY KNOWN AS CAMP DETRICK H	FORMERLY KNOWN AS CAMP DETRICK
FORT RICHMOND	ARMY		AK	UNITED STATES	TRANSPORT		FTR

SITE NAME	VENUE/OPERATION	CITY	STATE	UNIT	ACTIVITY	REMARKS	SITE	INDS
FORT STEWART	ARMY		GA	UNITED STATES	TRANSPORT		FTST	
GEOMET TECHNOLOGIES, INC.	OTHER	GAITHERSBURG	MD	UNITED STATES	ROTAE			
GERMANY--VARIOUS SITES			GERMANY		TRANSPORT, STORAGE	RETROGRADE PROGRAM		
GRANAN ARMY AIR FIELD	ARMY	FORT RIXOX	KY	UNITED STATES	TRANSPORT		GAUF	
GRANTITE PEAK INSTALLATION		TORRELE	UT	UNITED STATES	SPECIAL PROJECTS			
GREAT LAKES NAVAL TRAINING CENTER	NAVY		IL	UNITED STATES	TRAINING, ROTAE	H		
GULF CHEMICAL WARFARE DEPOT		HUNTSVILLE	AL	UNITED STATES	TRANSPORT, STORAGE		OCWO	
HAWTHORNE ARMY AMMUNITION PLANT	ARMY		MO	UNITED STATES	TRANSPORT, STORAGE		HAAP	
HORN ISLAND INSTALLATION	ARMY	PASCAGOULA	MS	UNITED STATES	ROTAE, SPECIAL PROJECTS, PRODUCTION, STORAGE	H		
HUNTSVILLE ARSENAL	ARMY	HUNTSVILLE	AL	UNITED STATES	PRODUCTION, STORAGE	H		
III RESEARCH INSTITUTE	OTHER	CHICAGO	IL	UNITED STATES	ROTAE			
JOHNSTON ATOLL				UNITED STATES	TRANSPORT, STORAGE, DISPOSAL		JA	
KANAWHA PLANT	ARMY	SOUTH CHARLESTON	WV	UNITED STATES	PRODUCTION			
KEYPORT NAVAL TORPEDO STATION	NAVY		VA	UNITED STATES	TRANSPORT		KEY	
LETTERBERRY BORDOANCE DEPOT	ARMY		PA	UNITED STATES	TRANSPORT		LOD	
LEXINGTON-BLUE GRASS DEPOT ACTIVITY	ARMY	RICHMOND	KY	UNITED STATES	TRANSPORT, STORAGE		LEDA	
LITTLE ROCK AIR FORCE BASE	AIR FORCE	LITTLE ROCK	AR	UNITED STATES	TRANSPORT		LNARB	
LOS ALAMITOS NAVAL AIR STATION	NAVY	LOS ALAMITOS	CA	UNITED STATES	TRANSPORT		LALM	
LUALUALEI NAVAL MAGAZINE	NAVY		HI	UNITED STATES	TRANSPORT		LLL	
MACDILL ARMY AIR BASE	ARMY	TAMPA	FL	UNITED STATES	TRANSPORT		MAAB	

STATION NAME	ADDRESS/OPERATION	CITY	STATE	COUNTRY	ACTIVITY	REMARKS	UNIT
MARSHALL PLANT		NEW MARTINSVILLE	WV	UNITED STATES	PRODUCTION		WMA
BUCKLETER ARMY AMMUNITION PLANT	ARMY		OK	UNITED STATES	TRANSPORT		
MURKETT RESEARCH INSTITUTE	OTHER	KANSAS CITY	MO	UNITED STATES	ROTAE		
NSA RESEARCH CORPORATION	OTHER	EVANS CITY	PA	UNITED STATES	ROTAE		
MUSCLE SHOALS PHOSPHATE DEVELOPMENT WORKS	ARMY	MUSCLE SHOALS	AL	UNITED STATES	PRODUCTION		NSPDR
NAVAJO ARMY DEPOT	ARMY		AZ	UNITED STATES	TRANSPORT		NAZ
NAVAL MAGAZINE	NAVY		GUAM		TRANSPORT		NAVY
NAVAL MINE DEPOT	NAVY	YORKTOWN	VA	UNITED STATES	TRANSPORT		NMD
NAVAL RESEARCH LABORATORIES	NAVY	WASHINGTON	DC	UNITED STATES	ROTAE	H	NRL
NAVAL WEAPONS STATION	NAVY	CONCORD	CA	UNITED STATES	TRANSPORT		CON
NAVY AMMUNITION DEPOT-EARLE	NAVY	ELIZABETH	NJ	UNITED STATES	TRANSPORT	POINT OF DEPARTURE FOR SEA DISPOSAL OPERATION CHASE	
NEW ORLEANS PORT OF ENTRY		BRAITHWAITE	LA	UNITED STATES	TRANSPORT		NOPE
NEW RIVER MARINE CORPS AIR FIELD	MARINE CORPS		NC	UNITED STATES	TRANSPORT		NRJAF
NEPONT ARMY AMMUNITION PLANT	ARMY	NEPONT	IN	UNITED STATES	TRANSPORT, STORAGE, PRODUCTION		NAAP
PEOPLETON MUNICIPAL AIRPORT	OTHER		VA	UNITED STATES	TRANSPORT		PMMA
PHILLIPS ARMY AIR FIELD	ARMY	ABERDEEN PROVING GROUND	MD	UNITED STATES	TRANSPORT		PAAF
PINE BLUFF ARSENAL	ARMY	PINE BLUFF	AR	UNITED STATES	TRANSPORT, STORAGE, PRODUCTION		PBA
POPE AIR FORCE BASE	AIR FORCE	POPE	NC	UNITED STATES	TRANSPORT		PAPB
PUEBLO DEPOT ACTIVITY		PUEBLO	CO	UNITED STATES	TRANSPORT, STORAGE		PLDA
QUANTICO MARINE CORPS AIR FIELD	MARINE CORPS	QUANTICO	VA	UNITED STATES	TRANSPORT		QUAH

State	Agency Name	Agency/Department	City	State	Activity	Remarks	State
RAHWAY	RAHWAY	RAHWAY	RAHWAY	STATE	ACTIVITY	REMARKS	STATE
	RAHWAY ARSENAL			NJ	UNITED STATES	TRANSPORT	RAH
	RIVERS ISLAND	OTHER		NY		NOTAE	
	ROCKY MOUNTAIN ARSENAL	DENVER		CO	UNITED STATES	TRANSPORT, DISPOSAL, PRODUCTION	MA
	SAN BERNARDINO LOADING PLANT		SAN BERNARDINO	CA	UNITED STATES	PRODUCTION	
	SAN JACINTO ORDNANCE DEPOT		HOUSTON	TX	UNITED STATES	TRANSPORT	SJOD
	SAN JOSE ISLAND				PANAMA CANAL ZONE	NOTAE	
	SAVANNA ORDNANCE DEPOT		SAVANNA	IL	UNITED STATES	TRANSPORT	SVOD
	SEAL BEACH NAVAL WEAPONS STATION	NAVY		CA	UNITED STATES	TRANSPORT	SBKA
	SMALL BOAT WET STORAGE BASIN	NAVY	CHARLESTON	SC	UNITED STATES	TRANSPORT	SGBS
	SOUTHERN RESEARCH INSTITUTE	OTHER	BIRMINGHAM	AL	UNITED STATES	NOTAE	
	SRI INTERNATIONAL	OTHER	WENLO PARK	CA	UNITED STATES	NOTAE	
	ST. LOUIS PLANT	ARMY	EAST ST. LOUIS	IL	UNITED STATES	PRODUCTION	
	SUFFIELD TEST CENTER		RALSTON		ALBERTA CANADA	TRANSPORT, STORAGE, NOTAE	SUF
	SUNNY POINT NAVAL PIER	NAVY	SUNNY POINT	NC	UNITED STATES	TRANSPORT	SUN
	THEODORE NAVAL MAGAZINE	NAVY	MOBILE	AL	UNITED STATES	TRANSPORT	TMM
	TOOLE ARMY DEPOT	ARMY	TOOLE	UT	UNITED STATES	TRANSPORT, STORAGE, DISPOSAL	TEAD
	TRAVIS AIR FORCE BASE	AIR FORCE		CA	UNITED STATES	TRANSPORT	TAFB
	TRUETECH, INC.	OTHER	RIVERSIDE	NY	UNITED STATES	NOTAE	
	TULALIP BACKUP STORAGE DEPOT		TULALIP	WA	UNITED STATES	TRANSPORT	TUL
	TULLOCK PLANT		TULLOCK	CA	UNITED STATES	PRODUCTION	

SITE/STATION NAME	USERS/OPERATION	CITY	STATE	UNIT	ACTIVITY	MARKS	SITE	FMS
UMATILLA DEPOT ACTIVITY		HEMISTON	OR	UNITED STATES	TRANSPORT, STORAGE		UMDA	
UNIVERSITY OF CHICAGO	UNIVERSITY	CHICAGO	IL	UNITED STATES	ROTAE			
UPPER KIPAPA MILITARY RESERVATION			HI	UNITED STATES	TRANSPORT		UMUR	
VIGOR PLANT	ARMY	TERRE HAUTE	IN	UNITED STATES	SPECIAL PROJECTS	H		
WAINWRIGHT ARMY AIR FIELD	ARMY	FORT WAINWRIGHT	AK	UNITED STATES	TRANSPORT		WAAF	
WHIDDEY ISLAND NAVAL AIR STATION	NAVY		WA	UNITED STATES	TRANSPORT		SHID	
WRIGHT ARMY AIR FIELD	ARMY		GA	UNITED STATES	TRANSPORT		WRAF	
YUMA TEST STATION		YUMA	AZ	UNITED STATES	TRANSPORT		YTS	

SECTION TWO

CHEMICAL WEAPONS TEST

DOCUMENT REPOSITORIES

OASD (P&R)

WASHINGTON NATIONAL RECORDS CENTER, SUITLAND, MD

13 BOXES OF ARMY SURGEON GENERAL FILES

OVER 1000 LINEAR FEET OF ARMY CHEMICAL CORPS RECORDS

ARCHIVIST LOCATED AND PROVIDED 690 MEDICAL CARDS FROM
MUSTARD GAS EXPERIMENTS CARRIED OUT AT ABERDEEN
PROVING GROUND, MD; BUSHNELL FIELD, FL; DUGWAY PROVING
GROUND, UT

A LIST OF OFFICERS, AND PICTORIAL HISTORY OF THE SAN JOSE
PROJECT, PANAMA, WAS ALSO LOCATED.

*(This project included testing of mustard gas
penetration of protective clothing, and through jungle
canopy/foilage.)*

Attachment A Sample of Medical Treatment Cards

QASD (P&R)

NATIONAL PERSONNEL RECORDS CENTER, ST. LOUIS, MO

EXTENSIVE COLLECTION OF PERSONNEL AND ORGANIZATIONAL
FILES FROM EARLY 1900'S TO PRESENT

RECORDS INCLUDE TECHNICAL TEST INFORMATION, CONTRACT
INFORMATION, PERSONNEL AND MEDICAL RECORDS

PERSONNEL RECORDS INCLUDE MILITARY AND CIVILIANS

U.S. ARMY PERSONNEL RECORDS 1912-60 BURNED IN 1973

U.S. AIR FORCE PERSONNEL RECORDS 1947-63 BURNED

U.S. NAVY PERSONNEL & MEDICAL RECORDS IN TACT

WWII CIVILIAN PERSONNEL RECORDS AVAILABLE BY EMPLOYING
INSTALLATION

EXTENSIVE COLLECTION (MICROFICHE) OF MORNING REPORTS

Attachment B Sample Page from Records Location Report

Attachment C Sample Documentation Found in Individual
Research & Experimentation File

OASD (P&R)

DUGWAY PROVING GROUND TECHNICAL LIBRARY

EXTENSIVE COLLECTION OF OVER 60,000 DOCUMENTS ON
CHEMICAL WARFARE CATALOGED ON CBINFONET DATABASE

OVER 10,000 DOCUMENTS HAVE BEEN IMAGED ONTO OPTICAL
DISKS

LOCATED INFORMATION ON TESTS, DATES, SITES, AND AGENTS
BUT NO PERSONNEL IDENTIFIERS

OBTAINED TWO ACCIDENT REPORTS ON CIVILIAN EMPLOYEES
EXPOSED TO CHEMICAL AGENT THROUGH INDUSTRIAL ACCIDENT

Attachment D Copy of Accident Report on Mustard Burn

OASD (P&R)

**FISHER LIBRARY, ARMY CHEMICAL WEAPONS SCHOOL
FT. McCLELLAN, AL**

LOCATED SOURCE DOCUMENTS USED FOR WWII REPORTS GENERATED
BY DEFENSE TECHNICAL INFORMATION CENTER AND CHEMICAL/
BIOLOGICAL INFORMATION ANALYSIS CENTER

SOURCE DOCUMENTS CITED 28,000 CIVILIAN EMPLOYEES IN
CHEMICAL WEAPONS SERVICE AT HEIGHT OF WWII

NO APPARENT PERSONNEL RECORDS OR ROSTERS

OASD (P&R)

UNIVERSITY OF CHICAGO LIBRARY, CHICAGO, IL

THIS RECORDS COLLECTION INCLUDES 82 BOXES FROM THE
OFFICE OF THE VICE PRESIDENT FOR SPECIAL PROJECTS
AT UNIVERSITY OF CHICAGO

IT CONTAINS RECORDS FOR THE YEARS 1940-1969

TWO BOXES HAVE BEEN TAGGED FOR POTENTIAL TEST
INFORMATION ON MUSTARD GAS TESTS

THIS COLLECTION HAS NOT BEEN REVIEWED

SECTION THREE

CHEMICAL WEAPONS EXPOSURE

PERSONNEL DATABASE

OASD (P&R)

CHEMICAL WEAPONS EXPOSURE PERSONNEL DATABASE

(MAINTAINED BY DEFENSE MANPOWER DATA CENTER)

DATABASE CONSISTS OF FOLLOWING INFORMATION FIELDS:

NAME, BRANCH OF SERVICE

SERVICE OR SOCIAL SECURITY NUMBER

AGE, RANK, OR GRADE IF CIVILIAN

AGENT EXPOSED TO (MUSTARD, LEWISITE, LSD)

PROJECT NAME, START & END DATE

EXPOSURE TYPE (CHAMBER OR FIELD TEST, ACCIDENT)

MILITARY UNIT

LOCATION OF DOCUMENTATION/RECORD

DOCUMENT/RECORD TYPE (MEDICAL, PERSONNEL)

**690 NAMES HAVE BEEN ENTERED FROM MEDICAL CARDS FROM 1944-45
(BUSHNELL, EDGEWOOD ARSENAL, DUGWAY PROVING GROUND)**

**270 NAMES HAVE BEEN FORWARDED FROM SPECIAL COMMENDATION
ORDER 152 DATED 25 JUNE 1944**

**2300 NAMES FROM NAVAL RESEARCH LAB HAVE BEEN FORWARDED
FOR ENTRY INTO DATABASE (WWII MUSTARD GAS TESTS)**

**300 MEDICAL RECORDS HAVE BEEN LOCATED AT NPRC, ST. LOUIS
(EXPERIMENTS FROM LATE 1960'S USING LSD, CANNOBINAL,
VARIOUS HALLUCINOGENICS)**

**800 ADDITIONAL MEDICAL RECORDS FROM SAME TEST PERIOD HAVE
BEEN TRACED TO U.S. ARMY MICROFICHED DOCUMENTS LOCATED
AT ABERDEEN PROVING GROUND (ORIGINAL MEDICAL RECORDS WERE
INTERFILED WITH PERSONNEL RECORDS IN ST. LOUIS)**

3200 NAMES HAVE BEEN SENT TO DMDC FOR THE DATABASE

Attachment G Copy of Army Letter Directing Full Records
Search 1993

The SAS System

OBS	BRANCH	SSN	SVCNUM	DOB	AGE	RANK	AGENTS	ILOC	STATE	ZIP
27	A		31925435		19	PVI	II	BUSHNELL	FL	
28	A		31268130		26	PFC	II	BUSHNELL	FL	
29	A		33005008		26		VEVICANT	EDGEWOOD ARSENAL	MD	
30	A		11183325		28	PVT	II	BUSHNELL	FL	
31	A		19042161			T/3	CLASSIFIED	DUGWAY	UT	
32	A		31457364		25	PVT	GAS	EDGEWOOD ARSENAL	MD	
33	A		42013111			PVT	GAS	EDGEWOOD ARSENAL	MD	
34	A		19049966			SGT	CLASSIFIED	EDGEWOOD ARSENAL	MD	
35	A		6394492		26	T/8	II	BUSHNELL	FL	
36	A		6394492		26	T/8	MODULE GWS UNIT	BUSHNELL	FL	
37	A		31297293		24	LST SGT	CLASSIFIED	DUGWAY	UT	
38	A		31297293		24	LST SGT	OC GWS	DUGWAY	UT	
39	A		39008575		24	T/4	CLASSIFIED	DUGWAY	UT	
40	A		39008575			T/4	OC GWS	DUGWAY	UT	
41	A		39277358		20	PVT	GAS	EDGEWOOD ARSENAL	MD	
42	A		36481726			TEC 5	II	BUSHNELL	FL	
43	A		31327872		37	PVT	GAS	EDGEWOOD ARSENAL	MD	
44	A		33849079		20	PVT	II	BUSHNELL	FL	
45	A		33730179			PVT	II	DUGWAY	UT	
46	A		39680713		24	PFC	CLASSIFIED	EDGEWOOD ARSENAL	MD	
47	A		33203219			PVT	GAS	EDGEWOOD ARSENAL	MD	
48	A		32957192		19	PVT	GAS	EDGEWOOD ARSENAL	MD	
49	A		32269034		23	PFC	II VAPOR	EDGEWOOD ARSENAL	MD	
50	A		32957596		19	PVT	GAS	EDGEWOOD ARSENAL	MD	
51	A		34176620		27	SGT	II	BUSHNELL	FL	
52	A		19052369			PFC	CLASSIFIED	DUGWAY	UT	

ONS	PROJECT	DEGDATE	EMDDATE	EXPTYPE	NARRATIV	UNIT	SLOC	DOCTYPE	DOCNUM
27	BUSHNELL	441005	441207		YES		SUITLAND	MEDICAL	
28	BUSHNELL	440226	440311	FIELD TRIALS	YES		SUITLAND	MEDICAL	
29	BUSHNELL	440824		CHAMBER TEST	YES		SUITLAND	MEDICAL	
30	BUSHNELL	440819	441117	TRIAL TEST	YES	6 M T B	SUITLAND	MEDICAL	
31	BUSHNELL	450202	450411	TEST	YES	DPG MORTU C GWS UNIT	SUITLAND	MEDICAL	
32	BUSHNELL	000824		TEST	YES	TSU 9770 GWS DET#4 MED DIV	SUITLAND	MEDICAL	
33	BUSHNELL	440516		TEST	YES	26 M T B CP GT	SUITLAND	MEDICAL	
34	BUSHNELL	440516		TEST	YES	169TH CML SG CO GWS	SUITLAND	MEDICAL	
35	BUSHNELL	440605	440925	TEST	YES	9770 GWS DET#4 MED DIV OC C	SUITLAND	MEDICAL	
36	BUSHNELL	440605	440925	TEST	YES	125TH CHEMPROCCO	SUITLAND	MEDICAL	
37	BUSHNELL	440609		TEST	YES	125TH CHEMPROCCO	SUITLAND	MEDICAL	
38	BUSHNELL	440609		TEST	YES	121ST GWS	SUITLAND	MEDICAL	
39	BUSHNELL	441209		TEST	YES	121ST GWS	SUITLAND	MEDICAL	
40	BUSHNELL	441209		TEST	YES	TSU 9770 GWS DET#4 MED DIV	SUITLAND	MEDICAL	
41	BUSHNELL	441209		TEST	YES	TSU 9770 GWS DET#4 MED DIV	SUITLAND	MEDICAL	
42	BUSHNELL	441209		TEST	YES	PP12 50700110	SUITLAND	MEDICAL	