

MMRP PROJECT SUMMARY SHEET
LAKE ONTARIO ORDNANCE WORKS
FUDS PROJECT NUMBER C02NY002508
23 MARCH 2007

PROJECT DESCRIPTION: This MMRP project summary sheet is part of Addendum Number 1 to the initial Inventory Project Report (INPR) with the Findings and Determination of Eligibility (FDE) signed 15 June 1986. This MMRP project summary sheet proposes a project to address remaining MMRP concerns from the presence of conventional munitions.

TNT Manufacturing Area:

Between 1940 and 1943 L00W was constructed and operated as a TNT manufacturing facility. The site was a government-owned, contractor-operated (GOCO) facility operated by the Chemical Construction Corporation (CCC) for DOD. In 1943, partial decontamination of the site was completed by John W. Cowper Co. and John W. Danforth Co. under contract to U.S. Army Corps of Engineers (USACE). The work mainly involved the decontamination of process equipment, machinery, tools, and surplus stock items that were in high demand by other bases. It was reported that much of this material was transferred to other facilities. However, no list indicating what was decontaminated and no certificate of decontamination was found.

A decontamination report entitled "Appraisal of Ordnance Plant Facilities, Final Report WA-New York-1, Lake Ontario Ordnance Works, Niagara County, New York" was prepared for the former L00W by Industrial Research Corporation (IRC). The report, which was submitted to the WAA on 3 March 1948, concluded that while no large deposits of TNT were apparent from inspection, there was undoubtedly "ground contamination at considerable extent in certain sections of each of the explosive production areas and that final decontamination would have to take this into consideration." The report stated that in general decontamination was accomplished to a certain level, not complete but described as leaving the plant "in idle stand-by for re-use." This decontamination was accomplished in accordance with various Ordnance Department and War Department technical bulletins and directives. The report identifies potential hazards such as waste disposal lines, operating buildings, and grounds associated with TNT manufacturing operations remaining at the site; and warns that TNT waste material could be detonated by fire, smoking, driving, drilling and other activities potentially conducted onsite.

On 29 October 1982, the New York State Department of Environmental Conservation (NYSDEC) and CWM Chemical Services LLC. (CWM LLC.) collected sludge samples from an acid waste line associated with the former TNT manufacturing process (reportedly located somewhere along M street). NYSDEC reported that the samples were brownish and orange and were thought to be residual TNT. According to sample results, the dried sludge sample had TNT in high enough concentrations to pose an explosive hazard 50% of the time when dropped from 19.5 in. above ground surface, but it was reported that this sludge was not as explosive as pure TNT. This was likely due to other constituents (such as DNT and NT) as well as TNT being present. It was noted that the wet sludge did not detonate.

In 2000/2001 a removal/closure operation was conducted by Radian International Inc. and Severson Environmental Services, Inc. (Severson) under contract to USACE (DERP-FUDS project No. C02NY002502, HTRW). The project involved the removal and closure in place of the former TNT waste line from the TNT wash-houses down to the sewage and wastewater treatment plant. The interim action was completed by 30 September 2003. One section of piping was not cleaned but

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left in place under an existing lagoon operated by CWM LLC. During pipeline removal/closure operations in August 2000, TNT crystals were observed on the ground surface in three separate locations along the pipeline. In a report entitled "Project Report Second Phase Emergency Ordnance Explosive Services Lake Ontario Ordnance Works TNT Pipeline Removal Project Lewiston, New York" prepared by ISSI Unexploded Ordnance Inc. (ISSI) (a contractor to Severson), it was reported that approximately 6 pounds (explosive weight) of TNT was found on the surface of the site along the former LOOW TNT waste line. It was reported that over 95% TNT was present in the sample. Recommendations were made for a UXO team to be present during subsequent investigations on the TNT waste line. In March 2001, ISSI completed another report entitled "After Action Report Trinitrotoluene Resizing Operation Former Lake Ontario Ordnance Plant Model City, New York" which summarized the process involved in mixing TNT nodules found during pipeline cleaning operations with sand/soil to bring the TNT content to less than 5%. An additional 313.8 pounds of Surface TNT has been recovered, processed, and removed from the site (USACE 2003). The 313.8 pounds of surface TNT was reported in the "After Action Report, Walkover and Surface Removal of TNT at the Lake Ontario Ordnance Works (LOOW) Site, 2003" (ISSI Unexploded Ordnance Incorporated). Also the ongoing investigation of the former LOOW wastewater treatment plant, currently owned by the Town of Lewiston, identified the presence of crystalline TNT.

Several remaining buildings/tanks associated with the former sewage and wastewater treatment plant as well as several remaining lines associated with the former TNT manufacturing operations have not been thoroughly investigated for the presence of munitions and explosives of concern (MEC) or munitions constituents (MC). Included in the remaining lines is an acid waste line leading from the acid manufacturing area (DOE [NFSS] property) to the TNT nitration house area (CWM LLC. property) and to the sewage and wastewater treatment plant (Town of Lewiston property). According to available historical information some sections of this line have been excavated and capped by CWM LLC. when they were encountered during CWM LLC. operations. As previously discussed a section of the acid waste line was sampled by NYSDEC in 1982 and it was reported that crystalline TNT at reactive concentrations (high enough concentrations to pose an explosive hazard) were identified in the pipeline. CWM LLC. continues to operate a hazardous waste disposal facility on its property and process/waste lines associated with the former TNT facility remain in place buried beneath the ground.

An aerial analysis has been completed for the former LOOW (circa 1997). Based on the review of the available photographs, several areas were documented as being disturbed during DOD operations. Some of these areas were identified as suspect disposal areas. As part of the ongoing RI (DERP-FUDS project No. C02NY002501, HTRW), sampling was conducted in one of the disturbed/disposal areas on property owned by Occidental Chemical Corporation. TNT (at non-explosive levels) along with its degradation products were reported in surface soil samples (EA Engineering 2001). Based on the results of the 2001 investigation the potential exists for additional disposal sites containing TNT to be present on the former LOOW.

Nike Battery NF-03/05 Area:

A portion of the site was used as a NIKE missile battery from 1954 to 1966. It is assumed that small arms ammunition was located onsite for use in security of the site. No firing ranges or small arms target ranges were found

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to exist onsite; therefore, there is no reason to suspect that small arms were fired/discharged at the former NIKE site. It is further assumed that the small arms ammunition was removed from the site with the rest of the Army assets when the site was abandoned and sold. Therefore, the presence of small arms ammunition at the NIKE site is unlikely. As previously discussed, the Launch Area is still owned by DOD and is not part of the FUDS. The Control Area is owned by CWM LLC. and the area is not in use. Representatives of CWM LLC. have indicated that they are not aware of MMRP-related hazards (i.e. small arms ammunition) remaining at the former NIKE site. This MMRP project does not address MMRP hazards associated with the former Northeast Chemical Warfare (NECW) Depot.

PROJECT ELIGIBILITY: TNT associated with former DOD contractor operations (TNT manufacturing and decontamination of TNT manufacturing facilities) present in concentrations high enough to pose an explosive hazard is MMRP project-eligible. The TNT potentially present in the former TNT waste and process lines, sewage and wastewater treatment plant buildings and tanks, remaining TNT manufacturing and storage facilities, and on the ground surface (confirmed to be present in the TNT Manufacturing area) is expected to pose an explosive hazard. In addition, the TNT degradation products found during the RI in surface soil at explosive levels (near the TNT waste pipeline) are project-eligible.

POLICY CONSIDERATIONS: Any potential hazards presented by MEC or MC that may be located on the approximately 191-acre NFSS are not project-eligible, because hazards on the NFSS are being addressed under the Formerly Used Sites Remedial action Program (FUSRAP). Any potential hazards presented by MEC or MC that may be located on the 864.02 acres fee and 15.08 acres easement [existing over fee acreage] associated with the National Guard WETS are not project-eligible, and hazards on the WETS should be addressed under the Installation Restoration Program (IRP). The eligible HTRW issues associated with low levels of TNT and its degradation products in and around the manufacturing areas are already being addressed under a previously authorized HTRW project (C02NY002502) that was approved and entered into the FUDS Management Information System (FUDSMIS) prior to the date that the MMRP program category was officially established. As a matter of DERP-FUDS policy, these issues will continue to be addressed under the HTRW project. There are no policy considerations to prevent the proposal of an MMRP project to address remaining MMRP hazards (including explosive levels of TNT) associated with the former LOOW and located on the DERP-FUDS eligible portion of the site.

PROPOSED ACTIVITIES: In accordance with DERP-FUDS policy, an MMRP project is proposed for the DERP-FUDS eligible portion of the site. The project includes the evaluation of LOOW operations and confirmation of the status of other suspect disposal sites along with a site inspection to include sampling as appropriate to confirm the additional MMRP hazards.

MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL (MRSPP): Attached.

PROJECT POINT OF CONTACT: Bill Kowalewski, CELRB-PM-F, (716) 879-4418.

LEAD REGULATOR: Kent Johnson, New York State Department of Environmental Conservation (NYSDEC), (518) 402-8594.

MMRP PROJECT SUMMARY SHEET
LAKE ONTARIO ORDNANCE WORKS
FUDS PROJECT NUMBER C02NY002509
23 MARCH 2007

PROJECT DESCRIPTION: This MMRP project summary sheet is part of Addendum Number 1 to the initial Inventory Project Report (INPR) with the Findings and Determination of Eligibility (FDE) signed 15 June 1986. This MMRP project summary sheet proposes a project to address remaining MMRP concerns from the presence of chemical warfare materiel (CWM).

NECW Depot Area:

Approximately 860 acres located on the north side of Balmer Road (the northern portion of LOOW) was transferred from the USACE-North Atlantic Division to the U.S. Army CWS on 27 June 1944. The storage area, which contained the 58 TNT storage "igloos" associated with the former LOOW, was subsequently designated the Northeast Chemical Warfare (NECW) Depot. It was classified as a "Class IV installation" and was identified as a sub-depot of the Eastern Chemical Warfare Depot, Edgewood Arsenal (Edgewood, Maryland). The storage area of the NECW Depot was essentially rectangular in shape and was generally bounded on the south by Balmer Road, on the west by Lutts Road, on the north by vacant land (previously identified as the North Patrol Road), and on the east by Porter Center Road. Facility improvements included the restoration of 4 buildings for the housing of administrative personnel and the installation of certain required utilities. As of May 1945, the NECW Depot included 58 magazines (each igloo was 26 ft by 60 ft interior), 1 warehouse (105 ft by 200 ft), 1 administration building (20 ft by 45 ft), 1 telephone building (15 ft by 25 ft), 1 clock house (30 ft by 30 ft), 1 maintenance shop (40 ft by 65 ft), 1 carpenter shop (28 ft by 50 ft), 2 tool houses (each 20 ft by 40 ft), 47 open storage areas (each 14 ft by 200 ft), and 1 drum storage area (90 ft by 200 ft). The original LOOW railroad spur and loop located along the eastern portion of the site was used to import and export munitions shipments. According to reports dating from circa 1979, the area occupied by NECW also included land south of Balmer Road, as well as the former LOOW box factory, locomotive shed and various administration buildings. It is unclear how much additional acreage was occupied by the NECW depot and how this land was acquired (i.e. use permit or transfer from USACE NAD).

The bulk of the material that was stored at the NECW Depot during World War II was produced locally and was temporarily stored prior to shipment to the New York Port of Embarkation. At the close of World War II in Europe, the NECW Depot was identified as a temporary storage site for incendiary bombs (such as M-17, M-47, and M-76 bombs) which came back to the United States from Europe. Complete information (e.g., inventory lists) regarding the materials and bombs stored at the NECW Depot was not identified in the historical information located/reviewed. According to one historical document dated circa 1979, "in December 1970, an AEC radiological team surveying the Lake Ontario Ordnance Works site for radiation hazards unexpectedly encountered a sign at the site warning "Danger, Phosgene Gas Stored Here". The AEC called in Army Chemical Warfare experts from Edgewood Arsenal to assess the situation. One of those experts later appeared as an Army representative testifying before the Assembly Committee on Environmental Conservation. The Army expert reported that the phosgene gas cylinders were in fact determined to have been buried at the LOOW site, as indicated by the warning sign, but that when the cylinders were discovered the cylinders were empty and posed no hazard." A second reference to cylinders was found in a 1978 trip report which states that no one interviewed "ever recalled burial pits (other than some cylinder that had been buried, marked, removed, and sold back in 1970)". No additional

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information was found to determine the specific location of the cylinders and the report did not confirm the final status of the cylinders.

Property records indicate that the NECW Depot owned and operated the property north of Balmer Road which is currently owned by the US Army and leased to the New York National Guard as the Weekend Training Site (WETS). The WETS occupies 864.02 acres fee and 15.08 acres easement [existing over fee acreage] associated with the former NECW Depot. Since this property remains under the ownership of the DOD, it is not eligible for remediation under DERP-FUDS.

However, historical records indicate the NECW Dept may have operated on property to the south of Balmer Road which has already been determined to be eligible under DERP-FUDS.

PROJECT ELIGIBILITY: CWM (empty phosgene cylinders) associated with the former NECW Depot were found buried at an unspecified location on the former LOOW. The Cylinders may have been removed. However, if they remain, they pose an MMRP hazard which needs to be investigated.

POLICY CONSIDERATIONS: Any potential hazards presented by MEC or MC that may be located on the approximately 191-acre NFSS are not project-eligible, because hazards on the NFSS are being addressed under the Formerly Used Sites Remedial action Program (FUSRAP). Any potential hazards presented by MEC or MC that may be located on the 864.02 acres fee and 15.08 acres easement [existing over fee acreage] associated with the National Guard WETS are not project-eligible, and hazards on the WETS should be addressed under the Installation Restoration Program (IRP). The eligible HTRW issues associated with low levels of TNT and its degradation products in and around the manufacturing areas are already being addressed under a previously authorized HTRW project (C02NY002502) that was approved and entered into the FUDS Management Information System (FUDSMIS) prior to the date that the MMRP program category was officially established. As a matter of DERP-FUDS policy, these issues will continue to be addressed under the HTRW project. There are no policy considerations to prevent the proposal of an MMRP project to address remaining CWM hazards (including the cylinders) associated with the former NECW Depot/LOOW and located on the DERP-FUDS eligible portion of the site.

PROPOSED ACTIVITIES: In accordance with DERP-FUDS policy, an MMRP project is proposed for the DERP-FUDS eligible portion of the site. The project includes the evaluation of NECW operations for potential CWM hazards per historical information developed during HTRW investigation and confirmation of the status of the cylinder disposal site.

MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL (MRSPP): Attached.

PROJECT POINT OF CONTACT: Bill Kowalewski, CELRB-PM-F, (716) 879-4418.

LEAD REGULATOR: Kent Johnson, New York State Department of Environmental Conservation (NYSDEC), (518) 402-8594.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT
LAKE ONTARIO ORDNANCE WORKS
LEWISTON/PORTER, NIAGARA COUNTY NEW YORK
SITE NO. C02NY0025
21 DECEMBER 2001

PROJECT DESCRIPTION: This OEW project summary sheet is part of Addendum No. 1 to the initial Inventory Project Report (TNPR) with the Findings and Determination of Eligibility (FDE) signed 15 June 1986. This addendum combines additional periods of use originally identified as separate sites into the INPR for the Lake Ontario Ordnance Works (LOOW) site (C02NY0025). Those sites which are included in the LOOW INPR are as follows: C02NY0012 (entitled Ransomville Test Annex [RTA] and signed 17 December 1992), C02NY0074 (entitled NIKE Battery NF-03 and signed 20 September 1985) and C02NY0576 (entitled Air Force Plant # 68 [AFP-68] signed 3 January 1992). Two additional sites C02NY0005 (identified as the Youngstown National Guard Facility) and C02NY0003 (identified as Air Force Plant 38 [AFP-38]) were determined to be ineligible since they are active DOD sites. However, since these sites were part of the original FUDS-eligible LOOW, they are also incorporated into this addendum. The addendum addresses site history, past uses of the site, and additional environmental and safety concerns remaining at the site.

The United States Department of Defense (DOD) acquired a total of approximately 7,567.46 acres in the towns of Lewiston and Porter Niagara County, New York at various times and by various methods for various uses. The acquisition of these 7,567.46 acres was for the construction of LOOW. Subsequent to the operation of LOOW, additional periods of DOD use occurred during which portions of the site were identified as the Northeast Chemical Warfare (NECW) Depot, AFP-38, Model City Igloo Area, Weekend Training Site (WETS), Navy Interim Pilot Production Plant (IPPP), AFP-68, NIKE Missile Battery NF-03/05, RTA, and the Youngstown Test Annex (YTA). Approximately 974.37 acres (98.62 acres fee associated with the YTA/the former Launch Area of NIKE Missile Battery NF-03/05 and 860.67 fee and 15.08 acres easement associated with the Army National Guard WETS/formerly known as AFP-38 and Model City Igloo Area) are still owned by DOD; therefore, this acreage is ineligible for consideration under DERP-FUDS. Potential OEW hazards associated with these ineligible parcels are not included in the discussion since they are ineligible for consideration under DERP-FUDS and should be addressed under the Installation Restoration Program (IRP).

LOOW was a government owned contractor operated (GOCO) facility built for the purpose of manufacturing flaked trinitrotoluene (TNT). The facility consisted of 6 TNT manufacturing lines (3 pairs) with the necessary facilities for the manufacture, recovery, purification, concentration, and mixing of the acid reagents incident to TNT manufacture as well as the disposal of waste materials from processing operations. Between October 1942 and July 1943, a total of 40,240,850 lbs of TNT was produced at LOOW. The operator of LOOW, the Chemical Construction Company (CCC), was ordered to place the facility in standby starting 1 August 1943. USACE was originally directed to remove and ship all of the equipment from the production lines. It was later determined that removal would be limited to the overhead piping and that which needed to be removed because it represented a safety hazard. No information was found pertaining to the specific equipment which was thought to represent a hazard. A contract between USACE and the John W. Cowper Co. and the John W. Danforth Co. was signed on 6 August 1943 for the dismantling and decontamination of the process equipment (Contract #W-321-eng.-986). Cowper and Danforth were to

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dismantle and decontaminate equipment that had been exposed to TNT and to clean equipment from the nitric acid areas to prevent deterioration. Actual dismantling and decontamination commenced on 12 August 1943. Process equipment, machinery, tools, and surplus stock items were in high demand by other bases, and many articles were transferred to other facilities. No certificate of decontamination was found in the information reviewed.

A decontamination report entitled "Appraisal of Ordnance Plant Facilities, Final Report WA-New York-1, Lake Ontario Ordnance Works, Niagara County, New York" was prepared for the former LOOW by Industrial Research Corporation (IRC). The report which was submitted to the WAA on 3 March 1948, concluded that while no large deposits (TNT) were apparent from inspection there is undoubtedly "ground contamination at considerable extent in certain sections of each of the explosive production areas and that final decontamination would have to take this into consideration." The report identifies potential hazards such as waste disposal lines; operating buildings; and grounds associated with TNT manufacturing operations.

On 29 October 1982, the State of New York, Department of Environmental Control (NYDEC) and CWM collected sludge samples from an acid waste line associated with the former TNT manufacturing process (reportedly located somewhere along M street). NYDEC reported that the samples were brownish and orange and were thought to be residual TNT. According to sample results, the dried sludge sample was detonable 50% of the time at 19.5 in., but it was reported that this sludge was not as explosive as pure TNT. This was likely due to other constituents (such as DNT and NT) as well as TNT being present. It was noted that the wet sludge did not detonate.

In 2000/2001 a removal/closure operation was conducted by Radian International Inc. and Severson Environmental Services, Inc. (Severson) under contract to USACE (DERP-FUDS project No. C02NY002505). The project involved the removal and closure in place of the former TNT waste line from the TNT wash houses down to the wastewater treatment plant. One section of piping was not cleaned but left in place under an existing lagoon operated by CWM. During pipeline removal/closure operations in August 2000, TNT crystals were observed on the ground surface in three separate locations along the pipeline. In a report entitled "Project Report Second Phase Emergency Ordnance Explosive Services Lake Ontario Ordnance Works TNT Pipeline Removal Project Lewiston, New York" prepared by ISSI Unexploded Ordnance Inc. (a contractor to Severson), it was reported that approximately 6 lbs (explosive weight) of TNT was found on the surface of the site along the former LOOW TNT waste line. It was reported that over 95% TNT was present in the sample. Recommendations were made for a UXO team be present during subsequent investigations on the TNT wasteline. In March 2001, ISSI completed another report entitled "After Action Report Trinitrotoluene Resizing Operation Former Lake Ontario Ordnance Plant Model City, New York" which summarized the process involved in mixing TNT nodules found during pipeline cleaning operations with sand/soil to bring the TNT content to less than 5%.

It is noted that remaining several buildings/tanks associated with the former wastewater treatment as well as several remaining lines associated with the former TNT manufacturing operations have not been thoroughly investigated for the presence of OEW. Included in the remaining lines is an acid waste line

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leading from the acid manufacturing area (DOE [NFSS] property) to the TNT nitration house area (CWM property) and to the wastewater treatment plant (Town of Lewiston property). According to available historical information some sections of this line have been excavated and capped by CWM when they were encountered during CWM operations. As previously discussed a section of the acid waste line was sampled by NYDEC in 1982 and it was reported that crystalline TNT (which was detonable) was present in the pipeline. CWM continues to operate a hazardous waste disposal facility on their property and process/waste lines associated with the former TNT facility remain in place buried beneath the ground.

In addition, TNT and its degradation products were reported in surface soil samples collected by EA Engineering in 2001 as part of the ongoing RI. The sampling was conducted in an area identified as a potential landfill located on property owned by Occidental Petroleum Corporation. The TNT levels were determined to be nondetonable.

A portion of the site was used as a NIKE missile battery from 1954 to 1966. It is assumed that small arms ammunition was located onsite for use in security of the site. As previously discussed, the Launch Area is still owned by DOD therefore it is ineligible for consideration under DERP-FUDS. The Control Area is owned by CWM and the area is not in use. Representatives of CWM have indicated that they are not aware of OEW-related hazards remaining at this portion of the site.

PROJECT ELIGIBILITY: The site was formerly used by the DOD between 1942 and 1943 for the production of TNT as well as subsequent DOD uses. Based on a review of available documents including historical information, site plans, etc., it appears that TNT process and waste lines associated with the former LGOW are still present. Non detonable quantities of TNT have been found during excavation activities associated with the TNT waste line which extended from the former wash houses to the wastewater treatment plant. In addition, samples collected on the ground surface (during removal of the TNT waste pipeline and during the 2001 RI) reportedly contained TNT and its degradation products. Based on a review of available information, the potential exists for residual TNT to be present in the former TNT waste and process lines, wastewater treatment plant buildings and tanks, remaining TNT manufacturing and storage facilities, and on the ground surface. These remaining facilities associated with the manufacture or storage of TNT (including the process lines, buildings, and tanks associated with the former wastewater treatment plant) represent OEW hazards. In addition the possibility exists that residual TNT is present on the ground surface or below the surface in the area of the wastewater treatment plant and in other areas of the site.

The former NIKE Missile Battery NF-03/05 was operated by the Department of the Army between 1954 and 1966. The DGD maintains an interest in the Launch Area portion of the site but the Control Area is owned by private interests. Based on the historical use of the site as a NIKE missile battery and the presence of guardhouses at the Control Area, it is assumed that small arms ammunition was present onsite for security purposes. Therefore, the potential presence of ordnance-related hazards may exist at the former Control Area portion of the site.

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A portion of the site containing 974.361 acres (the former NECW Depot/AFP-38/Army National Guard WETS and the former Launch Area of NIKE Missile Battery NF-03/05) is ineligible for consideration under DERP-FUDS since the acreage is still owned by DOD. In addition, the area identified as NFSS is being addressed under FUSRAP.

Based on a review of available information it is possible that OEW may be located on a portion of the former LOOW site, approximately 191 acres, which is currently owned by DOE. This area, identified as the Niagara Falls Storage Site (NFSS), contains the former acid production area as well as the former acid waste lines used in the production of TNT. It is noted that this site is being addressed under the Formerly Used Sites Remedial action Program (FUSRAP); therefore, OEW hazards associated with this property are not eligible under DERP-FUDS.

POLICY CONSIDERATIONS: There are no policy considerations under DERP-FUDS that prohibit the proposal of an OEW project at this site.

PROPOSED ACTIVITIES: The INPR should be referred to CEHND for determination of further action.

RAC: Attached. RAC Score 2 (111-A).

DISTRICT POC: Mary K. Foley, CELRB-PM-PM, (716) 879-4417.

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LEWISTON/PORTER, NIAGARA COUNTY NEW YORK
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30 JULY 2001

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A decontamination report entitled "Appraisal of Ordnance Plant Facilities, Final Report WA-New York-1, Lake Ontario Ordnance Works, Niagara County, New York" was prepared for the former LOOW by Industrial Research Corporation (IRC). The report which was submitted to the WAA on 3 March 1948, concluded that while no large deposits (TNT) were apparent from inspection there is undoubtedly "ground contamination at considerable extent in certain sections of each of the explosive production areas and that final decontamination would have to take this into consideration." The report identifies potential hazards such as waste disposal lines; operating buildings; and grounds associated with TNT manufacturing operations.

On 29 October 1982, the State of New York, Department of Environmental Control (NYDEC) and CWM collected sludge samples from an acid waste line associated with the former TNT manufacturing process (reportedly located somewhere along M street). NYDEC reported that the samples were brownish and orange and were thought to be residual TNT. According to sample results, the dried sludge sample was detonable 50% of the time at 19.5", but it was reported that this sludge was not as explosive as pure TNT. This was likely due to other constituents (such as DNT and NT) as well as TNT being present. It was noted that the wet sludge did not detonate.

In 2000/2001 a removal/closure operation was conducted by Radian International Inc. and Severson Environmental Services, Inc. (Severson) under contract to USACE (DERP-FUDS project No. C02NY002505). The project involved the removal and closure in place of the former TNT waste line from the TNT wash houses down to the wastewater treatment plant. One section of piping was not cleaned but left in place under an existing lagoon operated by CWM. USACE has plans to finish this section after CWM closes out the waste lagoon. During pipeline removal/closure operations in September 2000, TNT crystals were observed on the ground surface in three separate locations along the pipeline. In a report entitled "Project Report Second Phase Emergency Ordnance Explosive Services Lake Ontario Ordnance Works TNT Pipeline Removal Project Lewiston, New York" prepared by ISSI Unexploded Ordnance Inc. (ISSI is a contractor to Severson), it was reported that approximately 5.5 lbs (explosive weight) of TNT was found on the surface of the site along the former LOOW TNT waste line. Severson reported that the TNT found on the surface was assumed to be from the "the previous years pipeline removal operations". They also indicated that crystalline TNT deposits would most likely be encountered during follow on pipeline closure/removal actions, and therefore recommended that a UXO team be present. In March 2001, ISSI completed another report entitled "After Action Report Trinitrotoluene Resizing Operation Former Lake Ontario Ordnance Plant Model City, New York" which summarized the process involved in mixing TNT nodules found during pipeline cleaning operations with sand/soil to bring the TNT content to less than 5%.

In addition, TNT and its degradation products were reported in surface soil samples collected by EA Engineering in 2001 as part of the ongoing RI. The sampling was conducted in an area identified as a potential landfill located on property owned by Occidental Petroleum Corporation. The TNT levels were determined to be nondetonable.

OEW PROJECT SUMMARY SHEET (Continued)
LAKE ONTARIO ORDNANCE WORKS
OEW PROJECT NO. C02NY002508
LEWISTON/PORTER, NIAGARA COUNTY NEW YORK
SITE NO. C02NY0025

A portion of the site was used as a NIKE missile battery from 1954 to 1966. It is assumed that small arms ammunition was located onsite for use in security of the site. The Launch Area is still owned by DOD therefore it is ineligible for consideration under DERP-FUDS. The Control Area is owned by CWM and the area is not in use. Representatives of CWM have indicated that they are not aware of OEW-related hazards remaining at this portion of the site.

PROJECT ELIGIBILITY: The site was formerly used by the DOD between 1942 and 1943 for the production of TNT as well as subsequent DOD uses. Dismantling and decontamination of the TNT manufacturing facilities commenced on 12 August 1943; however, no certificate of decontamination was found. Based on a review of available documents including historical information, site plans, etc., it appears that TNT process and waste lines associated with the former LOOW are still present. Non detonable quantities of TNT were found during excavation activities associated with the TNT waste line which extended from the former wash houses. Included in the remaining lines is an acid waste line leading from the acid manufacturing area (DOE [NFSS] property) to the TNT nitration house area (CWM property) and to the wastewater treatment plant (Town of Lewiston property). According to available historical information some sections of this line have been excavated and capped by CWM when they were encountered during CWM operations. As previously discussed a section of the acid waste line was sampled by NYDEC in 1982 and it was reported that crystalline TNT (which was detonable) was present in the pipeline. CWM continues to operate a hazardous waste disposal facility on their property and process/waste lines associated with the former TNT facility remain in place buried beneath the ground. In addition, samples collected on the surface (during removal of the TNT waste pipeline and during the 2001 RI) reportedly contained TNT and its degradation products. The potential exists for residual TNT to remain in the former TNT waste and process lines as well as on the surface.

In addition, NIKE Missile Battery NF-03/05 is a former DOD installation which was operated by the Department of the Army between 1954 and 1966. The DOD maintains an interest in the Launch Area portion of the site but the Control Area is owned by private interests. Based on the historical use of the site as a NIKE missile battery and the presence of guardhouses at the site, it is assumed that small arms ammunition was present onsite for security purposes. Therefore, the potential presence of ordnance-related hazards may exist at the former Control Area portion of the site.

A portion of the site containing 974.361 acres (the former NECW Depot/AFP-38/Army National Guard WETS and the former Launch Area of NIKE Missile Battery NF-03/05) is ineligible for consideration under DERP-FUDS since the acreage is still owned by DOD.

POLICY CONSIDERATIONS: There are no policy considerations under DERP-FUDS that prohibit the proposal of an OEW project at this site.

PROPOSED ACTIVITIES: The INPR should be referred to CEHND for determination of further action.

RAC: Attached. RAC Score 2 (III-A).

GEW PROJECT SUMMARY SHEET (Continued)
LAKE ONTARIO ORDINANCE WORKS
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