

I. INTRODUCTION

This source has applied for a Clean Air Act Permit Program (CAAPP) operating permit for its existing operation. The CAAPP is the program established in Illinois for the operating permits for significant stationary sources required by the federal Clean Air Act, as amended in 1990. The conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA.

The Nalco Chemical Company is located at 6216 West 66th Place Chicago, Illinois. The source operates a specialty chemicals manufacturing plant. The source manufactures water treatment chemicals, silica products, and polymers for use by a variety of industries. In addition, the source operates a pilot plant for research and development of products and processes.

II. EMISSION UNITS

Significant emission units at this source are as follows:

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 121	1 Process Blender	Pre-1972	2046-SCB-2*
Unit 122	1 Process Blender	Pre-1972	2046-SCB-2*
Unit 123	1 Process Blender	Pre-1972	2046-SCB-2*
Unit 124	1 Process Blender	Pre-1972	2046-SCB-2*
Unit 124A	1 Process Blender	11/1995	None
Unit 124B	1 Process Blender	11/1995	None
Unit 125	1 Process Blender	Pre-1972	2046-SCB-2*
Unit 130	1 Process Blender	Pre-1972	None
Unit 140	1 Process Blender	Pre-1972	2046-SCB-3*
Unit 142	1 Process Blender	10/1973	2046-SCB-3*
Unit 155	1 Process Reactor	Pre-1972	None
Unit 156	1 Process Blender	Pre-1972	None
Unit 156A	1 Process Blender	11/1995	None
Unit 156B	1 Process Blender	11/1995	None
Unit 157	1 Process Blender	Pre-1972	None
Unit 157B	1 Process Blender	11/1995	None
Unit 157C	1 Process Blender	11/1995	None
Unit 159	1 Process Blender	12/1991	2046-SCB-3*
Unit 193	1 Process Blender	Pre-1972	2046-SCB-1*
Unit 195	1 Process Reactor	Pre-1972	None
Unit 200	1 Process Blender	Pre-1972	2046-SCB-1*
Unit 314	1 Process Blender	Pre-1972	None
Unit 457	1 Process Blender	8/1998	None
Latex Polymer Train (10 Units)			
Unit 164	Reactor	Pre-1972	None
Unit 166	Blender	1/1995	2544-SCB-1*
Unit 168	Blender	Pre-1972	2544-SCB-1*
Unit 205	Reactor	Pre-1972	None
Unit 230	Blender	Pre-1972	None
Unit 284	Blender	8/1983	2544-SCB-1*
Unit 440	Blender	2/1991	None
Unit 441	Blender	11/1989	2451-SCB-1*

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 443	Blender	11/1989	None
Unit 444	Blender	11/1989	None
Nalcoag Train (56 Units)			
Unit 042	Blender	Pre-1972	None
Unit 044	Blender	Pre-1972	None
Unit 060	Flash Tank	9/1975	None
Unit 061	Blender	Pre-1972	1048-SCB-1*
Unit 062	Blender	Pre-1972	None
Unit 063	Ion Exchanger	Pre-1972	None
Unit 066	Evaporator	Pre-1972	None
Unit 069	Blender	Pre-1972	None
Unit 074	Evaporator	Pre-1972	None
Unit 080	Evaporator	Pre-1972	None
Unit 081	Ion Exchanger	Pre-1972	None
Unit 082	Blender	Pre-1972	None
Unit 087	Evaporator	Pre-1972	None
Unit 089	Blender	Pre-1972	None
Unit 090	Blender	Pre-1972	None
Unit 091	Blender	Pre-1972	None
Unit 092	Blender	Pre-1972	None
Unit 093	Blender	Pre-1972	None
Unit 351	Blender	9/1975	None
Unit 352	Ion Exchanger	9/1975	None
Unit 353	Ion Exchanger	Pre-1972	None
Unit 355	Blender	9/1975	None
Unit 356	Evaporator	9/1975	None
Unit 357	Evaporator	9/1975	None
Unit 358	Reactor	1987	1048-SCB-1*
Unit 359	Reactor	1987	1048-SCB-1*
Unit 360	Blender	1987	None
Unit 361	Blender	1987	None
Unit 362	Blender	1987	None
Unit 363	Blender	1976	None
Unit 364	Blender	4/1980	None
Unit 365	Blender	4/1980	None
Unit 366	Blender	4/1980	None
Unit 367	Blender	4/1980	None
Unit 368	Reactor	4/1980	None
Unit 370	Blender	4/1980	None
Unit 377	Blender	1989	None
Unit 378	Blender	1989	None
Unit 379	Blender	1989	None
Unit 380	Blender	11/1997	None
Unit 381	Blender	11/1997	None
Unit 383	Blender	12/1992	None
Unit 428	Blender	1995	None
Unit 429	Blender	1995	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 445	Ion Exchanger	1995-1996	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 446	Ion Exchanger	1995-1996	None
Unit 447	Ion Exchanger	1995-1996	None
Unit 448	Ion Exchanger	1995-1996	None
Unit 453	Blender	1995-1996	None
Unit 463	Blender	6/1996	None
Unit 464	Blender	6/1996	None
Unit 465	Blender	6/1996	None
Unit 466	Ion Exchanger	1997	None
Unit 467	Ion Exchanger	1997	None
Unit 475	Blender	2/1999	None
Unit 498	Blender	4/2000	None
Solution Polymer Train (5 Units)			
Unit 300	Reactor	Pre-1972	None
Unit 302	Blender	Pre-1972	3257-SCB-1*
Unit 322	Blender	1980	3258-SCB-2*
Unit 325	Reactor	1980	None
Unit 328	Blender	1990	None
Pilot Plant (20 Units)			
Unit 022	Reactor	Pre-1972	None
Unit 025	Blender	Pre-1972	None
Unit 029	Reactor	Pre-1972	None
Unit 035	Reactor	Pre-1972	None
Unit 127	Reactor	10/1974	Scrubber*
Unit 189	Reactor	Pre-1972	None
Unit 237	Blender	Pre-1972	None
Unit 239	Reactor	10/1974	None
Unit 242	Blender	Pre-1972	None
Unit 243	Blender	Pre-1972	None
Unit 288	Blender	Pre-1972	None
Unit 292	Reactor	6/1980	None
Unit 382	Blender	12/1994	None
Unit 393	Reactor	12/1994	None
Unit 394	Blender	12/1994	None
Unit 395	Reactor	12/1994	None
Unit 396	Blender	12/1994	None
Unit 397	Blender	12/1994	None
Unit 399	Blender	12/1994	None
Unit 474	Reactor	1/1999	None
Applied Services (AS)	175 Units (maximum): Blending / storage units not greater than 550 gallons.	-	None
Storage Tank (152 Units)			
Unit 001	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 002	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 010	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 014	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 041	1 Fixed Roof Storage Tank	Pre-1972	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 046	1 Fixed Roof Storage Tank	Pre-1972	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 055	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 064	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 071	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 072	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 077	1 Fixed Roof Storage Tank	5/1976	None
Unit 101	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 102	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 103	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 104	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 105	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 106	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 107	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 108	1 Fixed Roof Storage Tank	1/1991	None
Unit 109	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 126	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 139	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 143	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 145	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 147	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 150	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 151	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 160	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 161	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 162	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 201	1 Fixed Roof Storage Tank	9/1980	None
Unit 206	1 Fixed Roof Storage Tank	Pre-1972	2751-SCB-1*
Unit 208	1 Fixed Roof Storage Tank	Pre-1972	2751-SCB-1*
Unit 210	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 211	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 212	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 213	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 218	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 219	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 220	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 221	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 222	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 223	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 224	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 225	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 226	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 227	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 228	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 229	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 231	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 232	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 233	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 245	1 Fixed Roof Storage Tank	4/1973	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 246	1 Fixed Roof Storage Tank	4/1973	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 247	1 Fixed Roof Storage Tank	4/1973	None
Unit 248	1 Fixed Roof Storage Tank	4/1973	None
Unit 249	1 Fixed Roof Storage Tank	4/1973	None
Unit 250	1 Fixed Roof Storage Tank	4/1973	None
Unit 251	1 Fixed Roof Storage Tank	4/1973	None
Unit 252	1 Fixed Roof Storage Tank	4/1973	None
Unit 253	1 Fixed Roof Storage Tank	4/1973	None
Unit 254	1 Fixed Roof Storage Tank	4/1973	None
Unit 245	1 Fixed Roof Storage Tank	4/1988	None
Unit 264	1 Fixed Roof Storage Tank	10/1972	None
Unit 278	1 Fixed Roof Storage Tank	9/1977	None
Unit 279	1 Fixed Roof Storage Tank	9/1977	None
Unit 282	1 Fixed Roof Storage Tank	10/1978	2544-SCB-1*
Unit 283	1 Fixed Roof Storage Tank	10/1978	2544-SCB-1*
Unit 285	1 Fixed Roof Storage Tank	5/1980	None
Unit 286	1 Fixed Roof Storage Tank	5/1980	None
Unit 290	1 Fixed Roof Storage Tank	6/1981	None
Unit 305	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 306	1 Fixed Roof Storage Tank	2/1988	None
Unit 307	1 Fixed Roof Storage Tank	2/1988	None
Unit 308	1 Fixed Roof Storage Tank	2/1988	None
Unit 310	1 Fixed Roof Storage Tank	2/1988	None
Unit 311	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 315	1 Fixed Roof Storage Tank	Pre-1972	None
Unit 318	1 Fixed Roof Storage Tank	2/1974	None
Unit 319	1 Fixed Roof Storage Tank	2/1974	None
Unit 320	1 Fixed Roof Storage Tank	2/1974	None
Unit 326	1 Fixed Roof Storage Tank	11/1984	None
Unit 327	1 Fixed Roof Storage Tank	1/1990	None
Unit 329	1 Fixed Roof Storage Tank	11/1992	None
Unit 331	1 Fixed Roof Storage Tank	6/1988	None
Unit 332	1 Fixed Roof Storage Tank	6/1988	None
Unit 333	1 Fixed Roof Storage Tank	6/1988	None
Unit 334	1 Fixed Roof Storage Tank	6/1988	None
Unit 335	1 Fixed Roof Storage Tank	6/1988	None
Unit 336	1 Fixed Roof Storage Tank	6/1988	None
Unit 337	1 Pressure Storage Tank	10/1990	Vapor Return
Unit 345	1 Fixed Roof Storage Tank	3/1994	None
Unit 347	1 Fixed Roof Storage Tank	3/1994	None
Unit 348	1 Fixed Roof Storage Tank	4/1980	None
Unit 349	1 Fixed Roof Storage Tank	4/1980	None
Unit 350	1 Fixed Roof Storage Tank	11/1976	None
Unit 354	1 Fixed Roof Storage Tank	11/1976	None
Unit 388	1 Fixed Roof Storage Tank	1/1991	None
Unit 389	1 Fixed Roof Storage Tank	1/1991	None
Unit 390	1 Fixed Roof Storage Tank	1993	3256-SCB-2*
Unit 391	1 Fixed Roof Storage Tank	1993	3256-SCB-3*

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 401	1 Fixed Roof Storage Tank	5/1982	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 402	1 Fixed Roof Storage Tank	5/1982	None
Unit 403	1 Fixed Roof Storage Tank	5/1982	None
Unit 404	1 Fixed Roof Storage Tank	5/1982	None
Unit 405	1 Fixed Roof Storage Tank	5/1982	None
Unit 406	1 Fixed Roof Storage Tank	5/1982	None
Unit 407	1 Fixed Roof Storage Tank	5/1982	None
Unit 408	1 Fixed Roof Storage Tank	5/1982	None
Unit 409	1 Fixed Roof Storage Tank	5/1982	None
Unit 410	1 Fixed Roof Storage Tank	5/1982	None
Unit 411	1 Fixed Roof Storage Tank	5/1982	None
Unit 412	1 Fixed Roof Storage Tank	5/1982	None
Unit 413	1 Fixed Roof Storage Tank	5/1982	None
Unit 414	1 Fixed Roof Storage Tank	5/1982	None
Unit 415	1 Fixed Roof Storage Tank	5/1982	None
Unit 416	1 Fixed Roof Storage Tank	5/1982	None
Unit 417	1 Fixed Roof Storage Tank	5/1982	None
Unit 418	1 Fixed Roof Storage Tank	5/1982	None
Unit 419	1 Fixed Roof Storage Tank	5/1982	None
Unit 420	1 Fixed Roof Storage Tank	5/1982	None
Unit 421	1 Fixed Roof Storage Tank	5/1982	None
Unit 422	1 Fixed Roof Storage Tank	5/1982	None
Unit 423	1 Fixed Roof Storage Tank	5/1982	None
Unit 424	1 Fixed Roof Storage Tank	5/1982	None
Unit 430	1 Fixed Roof Storage Tank	1/1994	None
Unit 431	1 Fixed Roof Storage Tank	1/1994	None
Unit 432	1 Fixed Roof Storage Tank	1/1994	None
Unit 433	1 Fixed Roof Storage Tank	1/1994	None
Unit 434	1 Fixed Roof Storage Tank	1/1994	None
Unit 435	1 Fixed Roof Storage Tank	1/1994	None
Unit 436	1 Fixed Roof Storage Tank	1/1994	None
Unit 437	1 Fixed Roof Storage Tank	1/1994	None
Unit 438	1 Fixed Roof Storage Tank	1/1994	None
Unit 439	1 Fixed Roof Storage Tank	1/1994	None
Unit 442	1 Fixed Roof Storage Tank	11/1989	None
Unit 443	1 Fixed Roof Storage Tank	11/1989	None
Unit 444	1 Fixed Roof Storage Tank	11/1989	None
Unit 449	1 Fixed Roof Storage Tank	1994-1995	None
Unit 450	1 Fixed Roof Storage Tank	1994-1995	None
Unit 451	1 Fixed Roof Storage Tank	1994-1995	None
Unit 452	1 Fixed Roof Storage Tank	7/1995	None
Unit 453	1 Fixed Roof Storage Tank	1995-1996	None
Unit 454	1 Fixed Roof Storage Tank	1995-1996	None
Unit 458	1 Fixed Roof Storage Tank	6/1996	None
Unit 463	1 Fixed Roof Storage Tank	6/1996	None
Unit 467	1 Fixed Roof Storage Tank	1/1997	None
Unit 478	1 Fixed Roof Storage Tank	6/1996	None
Unit 496	1 Fixed Roof Storage Tank	1999	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 497	1 Fixed Roof Storage Tank	1999	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 498	1 Fixed Roof Storage Tank	1999-2000	None
Unit 515	1 Fixed Roof Storage Tank	9/1990	2545-SCB-5*
Boiler 1	114.6 mmBtu/hr Natural Gas-Fired Boiler	12/1965	None
Boiler 2	124.0 mmBtu/hr Natural Gas-Fired Boiler	03/1973	None
Boiler 3	42.6 mmBtu/hr Natural Gas-Fired Boiler	Prior to 1973	None
Boiler 4	71.0 mmBtu/hr Natural Gas-Fired Boiler	04/1959	None
Loading Operations	Various Units: 10 loading racks, 6 fixed roof storage tanks, loading directly from process vessels	-	None

* The control equipment is permitted for use, but is not required to meet air emission standards.

III. EMISSIONS

This source is required to have a CAAPP permit since it is a major source of emissions.

For purposes of fees, the source is allowed the following emissions:

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	39.20
Sulfur Dioxide (SO ₂)	0.30
Particulate Matter (PM)	43.80
Nitrogen Oxides (NO _x)	140.00
HAP, not included in VOM or PM	1.00
TOTAL	224.30

This permit is a combined Title I/CAAPP permit that may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the Clean Air Act and regulations promulgated thereunder, including 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the permit by T1, T1R, or T1N. The source has requested that the Illinois EPA establish or revise such conditions in a Title I permit, consistent with the information provided in the CAAPP application. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

All emission sources in Illinois must comply with the federal New Source Performance Standards (NSPS). The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

All emission sources in Illinois must comply with the federal National Emission Standards for Hazardous Air Pollutants (NESHAP). The Illinois EPA is administering NESHAP in Illinois on behalf of the United States EPA under a delegation agreement.

V. PROPOSED PERMIT

CAAPP

A CAAPP permit contains all conditions that apply to a source and a listing of the applicable state and federal air pollution control regulations that are the origin of the conditions. The permit also contains emission limits and appropriate compliance procedures. The appropriate compliance procedures may include inspections, work practices, monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis.

Title I

A combined Title I/CAAPP permit contains terms and conditions established by the Illinois EPA pursuant to authority found in Title I provisions, e.g., 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Notwithstanding the expiration date on the first page of the permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 164.