NPDES FACILITY VERIFICATION OF INSPECTION

State Form 47989 (R5 / 4-05)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

P-file

FACILITY AND INSPECTION INFORMATION

NPDES permit number: IN0000108

Facility type code: ☐ 1 = Municipality ☒ 2 = Industry/Semi-Public ☐ 3 = Agricultural ☐ 4 = State/Federal
☒ Major ☐ Minor

This is to verify that on 12-12-05 (*month, day, year*) an inspection of the specified facility was conducted by the undersigned representative of the Indiana Department of Environmental Management, Office of Water Quality.

TYPE OF INSPECTION:
- X Compliance Evaluation Inspection (C)
- ___ Reconnaissance Inspection (R)
- ___ Industrial User Inspection (I)
- ___ Sanitary Sewer Overflow (V)
- ___ Multimedia Screening Evaluation (M)
- ___ Combined Sewer Overflow inspection (Y)
- ___ Compliance Sampling Inspection (S)
- ___ Other ___

Name of facility inspected: BP Products North America, Inc	Receiving waters / POTW: Lake Michigan IHSC - Lake George Branch	Expiration date of permit: 2-28-95
Location of facility inspected (*number, street, city, county*): 2815 Indpls Blvd Whiting, IN 46394-0710 Lake Co.		
Name(s) of on-site representatives: Rose Herrera	Title(s): Environmental Engr	Phone: (219) 473-3393 Fax: ( ) Phone: ( ) Fax: ( )
Certified operator: David Olen	Number: 14118 / Effective date of renewal: 7-1-04	Class: D / Date of expiration: 6-30-06	☒ Full time ☐ Part time / Hours per week: 40+
Name of responsible official: Daniel J. Sajkowski	Title: Business Unit Leader	Phone: (219) 473-3179 Fax: ( )
Address of responsible official (*number, street, city, state, ZIP code*): (Same)	Contacted ☐ Yes ☒ No	Facility design flow: 001-17MGD 002-120MGD

AREAS EVALUATED DURING INSPECTION

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated, NA = Not Applicable)

S	Receiving Waters Appearance	S	Facility / Site (B)	S	Self-Monitoring Program	NA	Compliance Schedules
S	Effluent Appearance	S	Operation (B)	M	Flow Measurement (D)	NA	Pretreatment
N	Permit	S	Maintenance (B)	S	Laboratory (E)	S	Effluent Limits (G)
NA	CSO / SSO (Sewer Overflow)	S	Sludge Disposal (C)	S	Records / Reports (F)		Other:

PRELIMINARY INSPECTION / SCREENING FINDINGS *

* These findings are considered preliminary and include specific matters discovered during the inspection that the designated agent of the department believes may be a violation of law or a permit issued by the department.

SINGLE MEDIA INSPECTION:
- X No violations were discovered with respect to the particular items observed during the inspection. (5)
- ___ Potential violations were discovered but corrected during the inspection. (4)
- ___ Potential violations were discovered and require a submittal and/or follow-up inspection. (2)
- ___ Potential violations were observed and may be referred to our Office of Enforcement. (1)
- ___ Additional information/review is required to evaluate overall compliance.
- ___ Other ___. (3)

Comments regarding unsatisfactory ratings - Including rule or permit citation(s):

Distribution: White - Public file; Canary - Site copy

Additional comments regarding unsatisfactory ratings - Including rule or permit citation(s):

Comments regarding ~~marginal~~ ratings - Conclusions and recommendations:

(A) The outfalls 001 and 002 were clear with no oil sheen and outfall 003 and 004 were not discharging. Lake Michigan was clear with no oil sheen.
(B) All equipment was in operation except for preventative maintenance. (C) Sludge is being sent off site for disposal see attached ~~ex~~ manifests. (D) Flow measurement for outfall 001 is calculated a new flow meter should be installed when the new NPDES permit becomes effective.

MULTI-MEDIA SCREENING *(please note that a multi-media screening is not a comprehensive evaluation of the compliance status of the facility)*

✓ Multi-media screening not conducted.
____ No violations were observed during the limited multi-media screening conducted.
____ Potential problems or potential violations were discovered but corrected during the inspection.
____ Potential problems or potenital violations were discovered and will be referred to the Office(s) of _____ for further investigation and response.

POLLUTION PREVENTION

Pollution prevention is the preferred means of environmental protection in Indiana. The goal of pollution prevention is to promote changes in business and commercial operation, especially manufacturing processes, so that less enviornmental wastes are generated. Your participation in Indiana's pollution prevention program is entirely voluntary. Would your company like to be contacted by IDEM's Office of Pollution Prevention and Technical Assistance?

re: mercury → ☒ Yes ☐ No

If you have any pollution prevention questions, you may contact our Office of Pollution Prevention and Technical Assistance at (317) 232-8172 or toll-free (800) 988-7901 or visit their web site at *http://www.in.gov/idem/oppta* .

SUMMARY AND CORRECTION INFORMATION

A summary of violations and concerns noted during the inspection were verbally communicated to the undersigned representative during the inspection. The facility should correct any deficiencies noted as soon as possible. Corrections made and verified during the inspection may still be cited as violations.

____ Written inspection summary will be provided within 45 days.

✓ Written report provided at the conclusion of the inspection. If upon subsequent review, any changes to this report are deemed necessary, a revised report will be sent to the subject facility within 45 days.

IDEM REPRESENTATIVE:

Printed name	Signature	Telephone number	Date *(month,day,year)*	Time
Michael Kuss	M Cauthen	219 742-9180	12-12-05	In: 8:56 A Out: 2:50 P

OWNER / AGENT REPRESENTATIVE / TITLE:

Printed name	Signature	Title	Telephone number	Date *(month, day, year)*
Rose Herrera	M Herrera	Envir. Engineer	219 473-3393	12/12/05

FOR IDEM INTERNAL USE:

Section Chief or Regional Deputy Director	Date *(month, day, year)*	For:
R L Pearson	12/22/05	☐ Follow up ☐ Enforcement ☐ NPDES permits ☐ Other

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State Form 44229(R/4-97)

IDEM	NPDES Facility Inspection Report **Comments and/or Recommendations**	PAGE 3 OF 3

NPDES PERMIT #:	FACILITY:	CITY:	YR/MO/DAY:
IN0000108	BP North America	Whiting	05-12-12

(E) Reviewed Lab QC/QC Plus Bench Sheets all OK.

(F) Records satisfactory Reviewed DMRs, C.O.C., Sample logs etc.

(G) No violations of Numeric effluent limitations in 2005 Through November.

Inspected by:	Received by:	Date:
Michael Kuss	Rose Herrera	12-12-05

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IDEM	NPDES Facility Compliance Evaluation Checklist Revised 11-17-05	
NPDES Permit #: IN 0000108	Facility Name: BP NORTH AMERICA	Month/Day/Year: 12-12-05

All evaluations indicated on this form are based upon the Inspector's observations at the time of the inspection.

A. Receiving Waters Appearance

				1. The receiving stream is visibly:
Yes	No	N/E	N/A	a. Free of excessive deposits of settled solids.
Yes	No	N/E	N/A	b. Free of excessive floating debris, oil, scum, or foam.

B. Effluent Appearance

				1. At the time of the inspection, effluent is essentially:
Yes	No	N/E	N/A	a. Free of excessive solids.
Yes	No	N/E	N/A	b. Free of excessive floating debris, oil, scum, or foam.

C. Permit

Yes	No	N/E	N/A	1.	Expired Permit has been administratively extended.
Yes	No	N/E	N/A	2.	The permit has been properly transferred. UNKOWN
A Yes	No	N/E	N/A	3.	Notification was given to IDEM of significant alterations or additions to the permitted facility.
B Yes	No	N/E	N/A	4.	All discharges are permitted.
Yes	No	N/E	N/A	5.	Receiving waters are accurately described in permit.

D. CSO/SSO (Sewer Overflow)

Yes	No	N/E	N/A	1.	CSO's are regularly monitored, and results are reported as required.
Yes	No	N/E	N/A	2.	Collection system is maintained to prevent overflows.
Yes	No	N/E	N/A	3.	Facility has met SSO reporting requirements.
Yes	No	N/E	N/A	4.	Facility has mitigated adverse impacts.

E. Facility/Site

Yes	No	N/E	N/A	1.	Facility has standby power or equivalent provision. TWO Feed Sources but NO Stand by Power If both Feeds Are Lost
C Yes	No	N/E	N/A	2.	An adequate alarm or notification system for power or equipment failure is available.
Yes	No	N/E	N/A	3.	Treatment system bypasses noted during the inspection are authorized by the permit.
Yes	No	N/E	N/A	4.	Treatment system bypasses noted during the inspection have been reported as required.
Yes	No	N/E	N/A	5.	Facility grounds are maintained in a manner which allows adequate access and/or view of all units.
Yes	No	N/E	N/A	6.	Clear access is maintained to outfall(s) at the receiving stream.

F. Operation

				1. All facilities and systems necessary for achieving compliance with the terms and conditions of the permit are operated in a manner consistent with the following:
Yes	No	N/E	N/A	a. All facilities and systems are operated efficiently.
Yes	No	N/E	N/A	b. An adequate, qualified operating staff is provided to carry out the operation of the facility.
Yes	No	N/E	N/A	2. A written Operation Plan has been established, including guidelines for each unit process, process control testing, sludge management, and wet weather operation (if needed).
Yes	No	N/E	N/A	3. Sufficient sludge is wasted from treatment system at proper time intervals to maintain process efficiency.

G. Maintenance

Yes	No	N/E	N/A	1. A maintenance record system has been established and includes:
Yes	No	N/E	N/A	a. Maintenance history.
Yes	No	N/E	N/A	b. Repair history.
Yes	No	N/E	N/A	2. A preventative maintenance (PM) plan has been established and includes:
Yes	No	N/E	N/A	a. Instruction files for PM for all equipment.
Yes	No	N/E	N/A	b. Schedules for all PM on all equipment.
Yes	No	N/E	N/A	b. Spare parts and supplies inventory.
Yes	No	N/E	N/A	3. Maintenance of equipment that could result in degradation of effluent quality is scheduled during non-critical water quality periods.
Yes	No	N/E	N/A	4. Lift station inspections are adequate.
Yes	No	N/E	N/A	5. Lift station cleaning and maintenance procedures are adequate.
Yes	No	N/E	N/A	6. Collection system maintenance is adequate.

H. Sludge Disposal

Yes	No	N/E	N/A	1. Sufficient Sludge is disposed of to maintain overall efficiency of facility.
Yes	No	N/E	N/A	2. Sludges, screenings, and slurries are properly handled and disposed of. incinerated on site or sent off site for incineration.

I. Self-Monitoring Program

Yes	No	N/E	N/A	1. Samples are taken at pre-designated locations.
Yes	No	N/E	N/A	2. Samples are representative.
Yes	No	N/E	N/A	3. Flow proportioned samples are obtained where needed.
Yes	No	N/E	N/A	4. Facility conducts sampling and analyses on parameters and wastestreams specified in the permit.
Yes	No	N/E	N/A	5. Facility conducts sampling and analyses at frequencies specified in the permit.
				6. Sample collection procedures include:
Yes	No	N/E	N/A	a. Samples are refrigerated during compositing.
Yes	No	N/E	N/A	b. Proper preservation techniques are used.
Yes	No	N/E	N/A	c. Containers and holding times conform to 40 CFR 136.3.
				7. Automatic sampling procedures include:
Yes	No	N/E	N/A	a. Sample intake tubing is placed in a well-mixed representative location.
Yes	No	N/E	N/A	b. Proper tubing is used for parameters analyzed.
Yes	No	N/E	N/A	c. Proper composite sample container is used for parameters analyzed.
Yes	No	N/E	N/A	d. Proper refrigeration of composite container is documented.
Yes	No	N/E	N/A	8. Sampling and analysis data include:
Yes	No	N/E	N/A	a. Dates, times, and location of sampling.
Yes	No	N/E	N/A	b. Name of individual performing sampling.
Yes	No	N/E	N/A	c. Analytical methods and techniques.
Yes	No	N/E	N/A	d. Results of analyses and calibration.
Yes	No	N/E	N/A	e. Dates of analyses.
Yes	No	N/E	N/A	f. Name of person performing analyses.
Yes	No	N/E	N/A	g. Instantaneous flow for flow weighted aliquots.

J. Flow Measurement

Yes	No	N/E	N/A	1. Primary device(s) appears to be properly installed and maintained.
Yes	No	N/E	N/A	2. Secondary instrument(s) appears to be properly installed, calibrated, operated, and maintained.
Yes	No	N/E	N/A	3. Flow is properly monitored as required by the permit.
Yes	No	N/E	N/A	4. Flow charts and records are available for review.
Yes	No	N/E	N/A	5. Calibration records are available for review.
Yes	No	N/E	N/A	6. Effluent flow is used in calculating effluent loadings.

→ except outfall 001; flow is calculated from several influent sources.

K. Laboratory

Yes	No	N/E	N/A	1. Written laboratory QA/QC manual available.

New flow meter to be installed with new NPDES permit.

K. Laboratory

Yes	No	N/E	N/A	2. Chain-of-Custody procedures followed.
Yes	No	N/E	N/A	3. Samples are properly stored.
Yes	No	N/E	N/A	4. Approved analytical methods used as required by permit.
Yes	No	N/E	N/A	5. If alternate analytical methods are used, proper written approval has been obtained.
Yes	No	N/E	N/A	6. Calibration and maintenance of instruments and equipment is satisfactory.
Yes	No	N/E	N/A	7. QA procedures are adequate.
Yes	No	N/E	N/A	8. QC procedures are adequate.
Yes	No	N/E	N/A	9. Clean and orderly work area is available to help prevent contamination.
Yes	No	N/E	N/A	10. Standards and appropriate blanks are available to perform daily check procedures.
Yes	No	N/E	N/A	11. Glassware properly cleaned.
Yes	No	N/E	N/A	12. Precision and accuracy of the analyses are sufficient.
Yes	No	N/E	N/A	13. Use correct formulas to calculate final results.
Yes	No	N/E	N/A	14. Laboratory data reported in proper form and units.
				15. Co mmercial Laboratory Used: SIMA - (T.R.C. + SE) Laboratory Name: ~~Microbac Labs~~ Laboratory Address: 250 W. 84th Dr. Merrillville 46410 Laboratory Contact: KAREN ZEOWICOSKI Laboratory Phone: 219-769-8378

L. Records/Reports

Yes	No	N/E	N/A	1. Records and reports are maintained on site as required by permit.
Yes	No	N/E	N/A	2. Information is maintained on site for 3 years.
Yes	No	N/E	N/A	3 Results of monitoring (using approved methods) performed more frequently than required by the permit are reported.
Yes	No	N/E	N/A	4. DMRs, MROs or MMRs, and CSODMR's are completed properly and accurately.
Yes	No	N/E	N/A	a. "No Ex" column is accurate.
Yes	No	N/E	N/A	b. Calculations are correct (including loadings, averages, etc.).
Yes	No	N/E	N/A	c. Signatory requirements are met.
Yes	No	N/E	N/A	d. Reports are prepared by or under the direction of a certified operator.
Yes	No	N/E	N/A	6. Monitoring records are adequate and include:
Yes	No	N/E	N/A	a. Lab bench sheets.
Yes	No	N/E	N/A	b. Sample logs.
Yes	No	N/E	N/A	c. Flow meter strip or circle charts and calibration records.
Yes	No	N/E	N/A	d. Laboratory instrument calibration and maintenance records.
				7. Pretreatment records include:
Yes	No	N/E	N/A	a. Inventory of Industrial Waste Contributors.
Yes	No	N/E	N/A	b. Monitoring data.
Yes	No	N/E	N/A	c. Inspection reports.
Yes	No	N/E	N/A	d. Compliance status records.
Yes	No	N/E	N/A	e. Enforcement actions.

M. Compliance Schedules

Yes	No	N/E	N/A	1. Monitoring milestones in the Schedule of Compliance have been met.
Yes	No	N/E	N/A	2. Reporting milestones in the Schedule of Compliance have been met.

N. Pretreatment

Yes	No	N/E	N/A	1. Industrial or commercial discharges are regulated as required by the permit.
Yes	No	N/E	N/A	2. The permittee has developed a Sewer Use Ordinance.
Yes	No	N/E	N/A	3. The permittee enforces the Sewer Use Ordinance.
Yes	No	N/E	N/A	4. The facility operates without significant interference from industrial or commercial discharges.

O. Summary of Monitoring Records Review.

MO/YR	Effluent Limit Violations	Date(s)	Type	Outfall	Parameter	Reported Value	Permit Limit
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No	See the attached					
/	Yes No						
/	Yes No	summary of					
/	Yes No						
/	Yes No	violations					
/	Yes No						
/	Yes No						
/	Yes No	None 2005 through October.					
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
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/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						
/	Yes No						

2005 Total Permit Limitation Violations 0 through Oct

DMx – Daily Maximum
DMn – Daily Minimum
MA – Monthly Average
MxWA – Maximum Weekly Average
% - Percent Removal

Comments Regarding Shaded YES Evaluations

(A) BP submitted an updated NPDES permit renewal application in 2002 and they are submitting information to EPEM-OWQ Industrial permits section on an ongoing basis in an effort to help facilitate the NPDES permit ~~re~~ renewal.

(B) All identified in the NPDES NO additional unpermitted outfalls were identified during the inspection.

(C) Alarms, light + sound for a wide array of parameters and functions.

IDEM WASTEWATER PRE-INSPECTION CHECKLIST

Name and Location of Facility to be Inspected:	NPDES Permit #:	GPS Coordinates Recorded:	Date to be Inspected:	Inspector:
Name: BP North America **Town/City:** Whiting **County:** Lake	IN0000108	NO	12-12-05	MPK

1.	REVIEW RELEVANT PROGRAM PERMIT AND PERMIT APPLICATIONS	CHECK ONE: YES (circled) / NO / N/A / N/E
IF NO, N/A, N/E:	**Provide explanation or description why:**	
IF YES:	**Info Source/ Location/Date Reviewed**: Files	**Inspector Notations Pertinent to Upcoming Inspection:**

2.	REVIEW PRIOR INSPECTION HISTORY & REPORTS RELEVANT TO THE PROGRAM INSPECTION, PARTICULARLY ANY OUTSTANDING OR UNRESOLVED ISSUES.	CHECK ONE: YES (circled) / NO / N/A / N/E
IF NO, N/A, N/E:	**Explanation:**	
IF YES:	**Info Source/Location/Date Reviewed**: Files	**Inspector Notations Pertinent to Upcoming Inspection:**

3.	REVIEW PRIOR COMPLIANCE AND ENFORCEMENT HISTORY RELEVANT TO PROGRAM INSPECTION, PARTICULARLY: WARNINGS AND MINOR VIOLATIONS, FORMAL ACTIONS (OE &/OR EPA)	CHECK ONE: YES / NO / N/A (circled) / N/E
IF NO, N/A, N/E:	**Explanation:** N/A	
IF YES:	**Info Source/Location/Date Reviewed**:	**Inspector Notations Pertinent to Upcoming Inspection:**

4.	REVIEW FACILITY RESPONSES TO ALL OF THE ABOVE.	CHECK ONE: YES / NO / N/A (circled) / N/E
IF NO, N/A, N/E:	**Explanation:** N/A	
IF YES:	**Info Source/Location/Date Reviewed**:	**Inspector Notations Pertinent to Upcoming Inspection:**

5.	REVIEW FACILITY RECORDS, REPORTS, SELF-MONITORING DATA CURRENTLY AVAILABLE.	CHECK ONE: YES (NO) N/A N/E
IF NO, N/A, N/E:	**Explanation:** Information is not readily available	
IF YES:	**Info Source/Location/Date Reviewed**	**Inspector Notations Pertinent to Upcoming Inspection:**

6.	REVIEW MAPS SHOWING FACILITY LAYOUT AND WASTE MANAGEMENT/ DISCHARGE SITES.	CHECK ONE: YES (NO) N/A N/E
IF NO, N/A, N/E:	**Explanation:** Not Necessary	
IF YES:	**Info Source/Location/Date Reviewed**	**Inspector Notations Pertinent to Upcoming Inspection:**

7.	REVIEW RECORDS OF CITIZEN'S COMPLAINTS.	CHECK ONE: YES (NO) N/A N/E
IF NO, N/A, N/E:	**Explanation:** None, in 2005 that are available.	
IF YES:	**Info Source/Location/Date Reviewed**	**Inspector Notations Pertinent to Upcoming Inspection:**

8.	REVIEW ANY PROCESS INFORMATION.	CHECK ONE: YES (NO) N/A N/E
IF NO, N/A, N/E:	**Explanation:** No Time allotted	
IF YES:	**Info Source/Location/Date Reviewed**	**Inspector Notations Pertinent to Upcoming Inspection:**

9.	REVIEW AND DETERMINE APPLICABLE REQUIREMENTS.	CHECK ONE: YES (NO) N/A N/E
IF NO, N/A, N/E:	**Explanation:** No Time allotted	
IF YES:	**Info Source/Location/Date Reviewed**	**Inspector Notations Pertinent to Upcoming Inspection:**

ADDITIONAL COMMENTS:

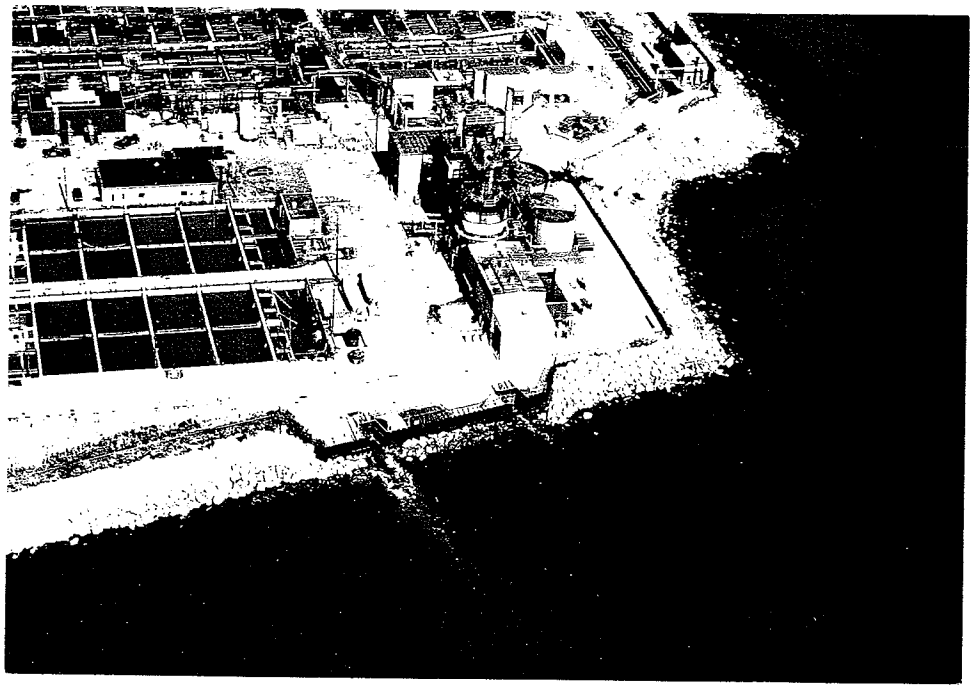


Photo #1 9-9-99 Amoco Oil outfalls
OO2 (left) and OO1 (right)
Photo taken by Robin McCullers
approx. 1000 AM

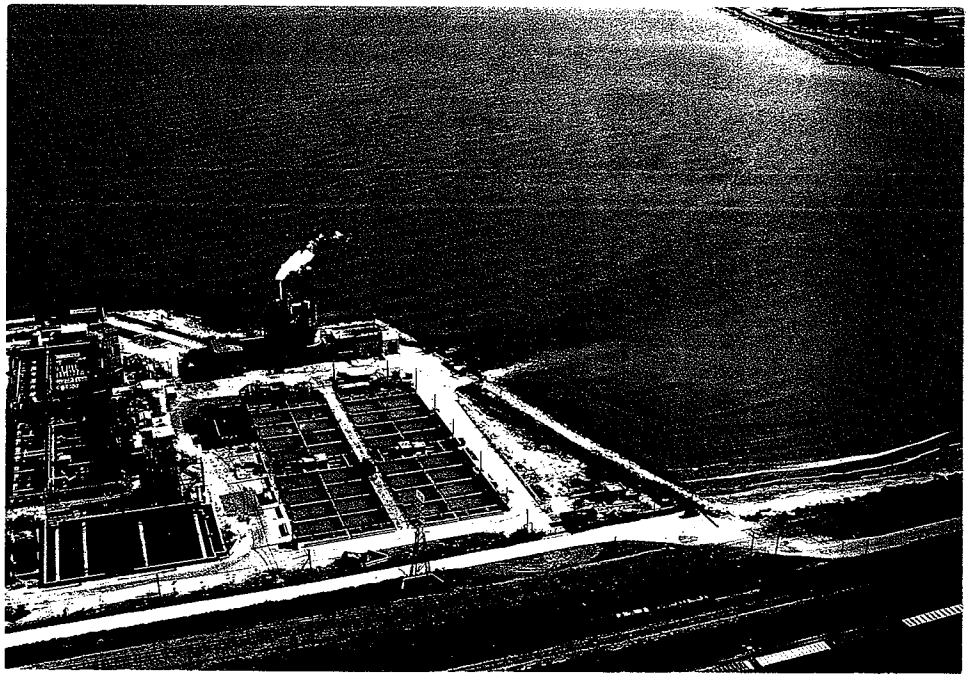


Photo #2 9-9-99 Amoco Oil and
cove area of Lake Michigan
Photo taken by Robin McCullers
approx. 1000 AM

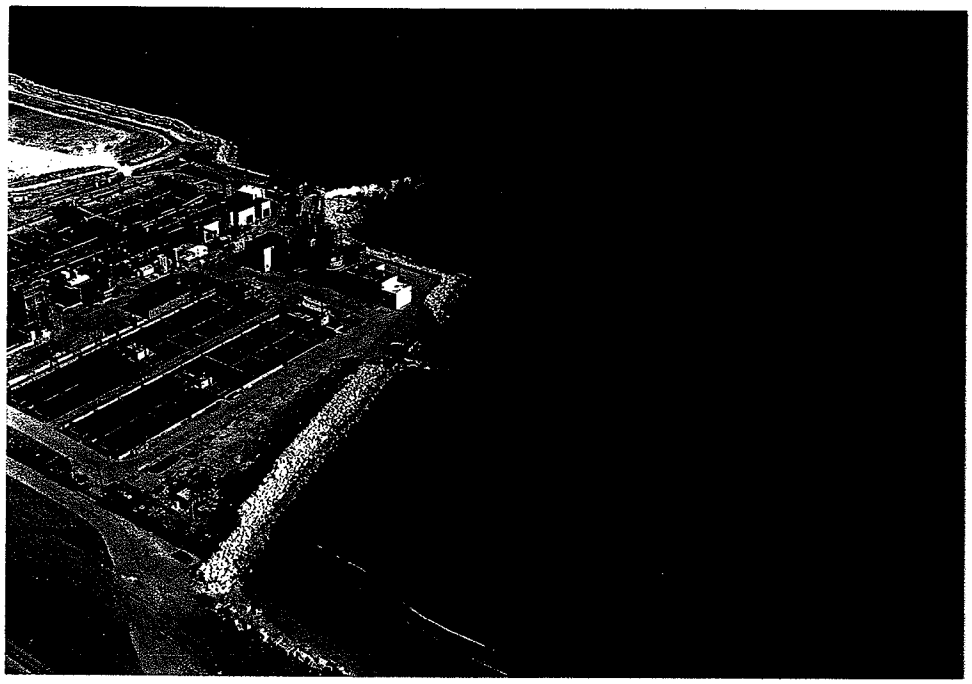


Photo #2 9-9-99- AMOCO OIL
and Cove AREA OF Lake Michigan
Photo taken by RALPH McCullers
Approx: 10:00 AM.

TREATMENT FACILITY CLASSIFICATION

The discharger has a Class D industrial wastewater treatment plant, classified in accordance with 327 IAC 8-12, Classification of Water and Wastewater Treatment Plants.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 001. Such discharge shall be limited and monitored by the permittee as specified below:

Discharge Limitations

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration [1] Monthly Average	Quality or Concentration [1] Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	Report[2]	MGD	—	—	—	Daily	Continuous
$TBOD_5$	4161	8164	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp.
TSS	3646	5694	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp.
COD	30323	58427	lbs/day	Report	Report	mg/l	3 X Weekly	24 Hr. Comp.
Oil and Grease	1368	2600	lbs/day	Report	Report	mg/l	5 X Weekly	Grab [3]
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	3 X Weekly	24 Hr. Comp.
Ammonia as N	1030	2060	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp.
Total Chromium[4]	23.9	68.53	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp.
Hex. Chromium[4]	2.01	4.48	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp.
Fecal Coliform[5]	—	—	—	200	400	colonies/100ml	5 X Weekly	Grab
Residual Chlorine[5]	—	—	—	Report	0.05	mg/l	5 X Weekly	Grab
2378-CDD [6]	—	—	—	Report	Report	pg/l	4 X Yearly	24 Hr. Comp.
2378-CDF [6]	—	—	—	Report	Report	pg/l	4 X Yearly	24 Hr. Comp.
Total Selenium	—	Report	lbs/day	—	Report	ug/l	2 X Yearly	24 Hr. Comp.

[1] The permittee shall begin reporting the effluent concentration of the parameters listed above which require reporting only as soon as possible but no later than three months after the effective date of the permit.

[2] The daily maximum flow shall be reported as the highest total daily flow for each monthly reporting period.

[3] Three Grabs Per 24 Hours (Oil & Grease)--Three individual samples taken at equally spaced time intervals during a 24-hour period. Each sample is individually analyzed and the arithmetic mean of the concentrations reported as the value for the 24-hour period. The number of grab samples taken in a 24-hour period may be reduced to one per day after a six month period after the effective date of the permit, if the effluent shows no violations of the oil and grease limitations listed above. At the end of the six month sampling period , the permittee may request, in writing, a review of these requirements. Upon review by the IDEM, the permit may be modified, after public notice and opportunity for hearing, to reduce the number of grab samples taken in a 24-hour period..

[4] If test results from the analysis performed for total chromium reveal that the concentration is less than the limitations for hexavalent chromium, then the test for hexavalent chromium may be eliminated and reported as the same concentration as total chromium for that day.

[5] Fecal coliform and residual chlorine are limited for the period from April 1 through October 31, annually, and only when the refinery sanitary sewers are discharging to the AMOCO WWTP. The monthly average for fecal coliform is calculated as a geometric mean. Residual chlorine testing of Outfall No. 001 is required only when directly chlorinating the outfall.

[6] The permittee shall sample the effluent once every three months for the presence of 2378 substituted chlorinated dibenzodioxin (CDD) and chlorinated dibenzofuran (CDF) isomers using U.S. EPA method 1613 with a target detection limit as low as reasonably achievable but not to exceed the minimum levels listed in Table 2 of method 1613 for a period of three years after the effective date of the permit. The permittee must develop and implement a plan to quantify and reduce the potential for the discharge of CDDs and CDFs in accordance with the schedule of compliance in Part I. D. of this permit.

a. The pH shall not be less than 6.5 nor greater than 9.0. The pH shall be monitored as follows: by a grab sample taken three times each week.

b. The discharge shall not cause excessive foam in the receiving waters. The discharge shall be essentially free of floating and settleable solids.

c. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

d. The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions apart from that normally produced by a properly functioning WWTP.

e. Samples taken in compliance with the monitoring requirements above shall be taken at a point representative of the discharge but prior to entry into Lake Michigan.

2. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 002. Such discharge shall be limited and monitored by the permittee as specified below:

Discharge Limitations

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
Flow	Report	Report	MGD	—	—	—	Daily	Continuous
TOC (Intake)	—	—	—	Report	Report	mg/l	5 X Weekly	Grab
TOC (Discharge)	—	—	—	Report	Report	mg/l	5 X Weekly	Grab
TOC (Net)	—	—	—	Report	5.0 [1]	mg/l	5 X Weekly	Grab
Total Residual Chlorine	—	—	—	Report	0.05	mg/l	1 X Weekly	Grab
Oil and Grease(Intake)	—	—	—	Report	Report	mg/l	3 X Weekly	Grab
Oil and Grease (Discharge)	—	—	—	Report	Report	mg/l	3 X Weekly	Grab
Oil and Grease(Net)	—	—	—	Report	5.0 [1]	mg/l	3 X Weekly	Grab
Temperature	—	—	—	Report	[2]	BTU/Hour	5 X Weekly	Continuous

Outfall No. 002 is limited solely to non-contact cooling water, free from process and other wastewater discharges except as provided in Part III.1. of the permit. In the event that water treatment additives, other than chlorine, are to be used in the waters contributing to this discharge, the permittee shall apply to the IDEM for approval of the use of the new additive.

[1] Total Organic Carbon (TOC) and Oil and Grease shall be limited on a net basis. The net result shall be calculated by subtracting the concentration value of the intake water from the concentration value of the gross discharge.

[2] The net result shall be calculated by subtracting the temperature value of the intake water from the temperature value of the gross discharge. The net heat discharged shall be maintained at or below the following limits:

2.0×10^9 BTU/Hour maximum daily average
1.7×10^9 BTU/Hour maximum monthly average

a. The pH shall not be less than 7.0 nor greater than 9.0. The pH shall be monitored as follows: by a grab sample taken three times each week.

b. The discharge shall not cause excessive foam in the receiving waters. The discharge shall be essentially free of floating and settleable solids.

c. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

d. The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

e. Samples taken in compliance with the monitoring requirements above shall be taken at a point representative of the discharge but prior to entry into Lake Michigan.

BP Amoco Oil
Whiting Refinery
2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

November 10, 1999

Mr. Michael Kuss
Indiana Department of Environmental Management
Office of Water Management
504 North Broadway
Suite 418
Gary, IN 46402-1921

Regarding NPDES Facility Inspection Report

BP Amoco would like to respond to the IDEM NPDES Facility Inspection Report dated September 9, 1999, for Permit IN0000108. In this report, effluent and receiving waters were evaluated as "marginal" compliance. We disagree with this characterization and respectfully request that this Inspection Report be amended to reflect the following information.

Effluent quality for September was excellent, especially with respect to total suspended solids (TSS) and oil and grease (O&G), which are the parameters that might have an effect on visual quality for Outfall 001. The attached data substantiates excellent effluent quality and proper wastewater treatment plant operation at the time of the inspection. The effluent, although slightly discolored due to low turbidity, was readily complying with discharge limits. When viewing the water column immediately adjacent to the outfall from a height of several hundred feet, the effect of low turbidity on transparency of the water column is enhanced, and thus the "brown" appearance.

We also disagree that a potential sheen existed adjacent to the outfall 001 area. Possible reasons for this visual effect include mixing effects and meteorological conditions. There was no substantiation that what was observed from the helicopter was a sheen; and, all effluent quality data for both outfalls would not support the presence of a sheen.

Lastly, we disagree with the characterization of outfall 002 as being "discolored". What was most likely being observed was air bubble entrainment created by boulders in the outfall area which result in a rapid-like turbulent mixing. This effect has been compounded this summer due to the very low lake levels.

Thank you for your attention in reviewing this information and including it in the record of the aforementioned NPDES Inspection Report. Please call me (219-473-3287) if you have any questions.

Stephen D. Simko
Environmental Superintendent
Health, Safety and Environment

Sep-99	Outfall 001 TSS		Outfall 001 O&G		Outfall 002 OUT-O&G
DATE	mg/l	LB/D	mg/l	LB/D	mg/l
1	12.8	2060	4.1	660	<0.3
2	18.0	2762	4.1	629	-- -
3	-- -	-- -	4.4	576	<0.3
4	-- -	-- -	-- -	-- -	-- -
5	10.8	1450	-- -	-- -	-- -
6	10.0	1368	2.4	328	<0.3
7	9.6	1265	2.3	303	-- -
8	9.6	1033	2.0	215	<0.3
9	12.4	1758	2.2	312	-- -
10	-- -	-- -	1.9	271	<0.3
11	-- -	-- -	-- -	-- -	-- -
12	8.2	1156	-- -	-- -	-- -
13	7.6	1059	1.6	223	<0.3
14	4.4	624	1.0	142	-- -
15	5.2	776	0.9	134	<0.3
16	6.0	946	1.0	158	-- -
17	-- -	-- -	1.5	223	0.4
18	-- -	-- -	-- -	-- -	-- -
19	5.6	752	-- -	-- -	-- -
20	6.4	870	1.6	218	<0.3
21	10.2	1361	1.7	227	-- -
22	10.0	1326	4.0	530	<0.3
23	14.8	1814	4.2	515	-- -
24	-- -	-- -	3.9	514	<0.3
25	-- -	-- -	-- -	-- -	-- -
26	14.4	1922	-- -	-- -	-- -
27	11.6	1741	2.0	300	<0.3
28	9.2	1404	2.5	382	-- -
29	11.6	1867	1.4	225	0.4
30	4.4	675	0.7	107	-- -
AVERAGE	9.7	1363	2.3	327	<0.3
HIGHEST VAL.	18.0	2762	4.4	660	0.4
	monthly avg limit:	3646		1368	--
	daily max limit:	5694		2600	5.0

RECEIVED
MAR 31 2000
By

BP Amoco

BP Amoco Oil
Whiting Refinery
2815 Indianapolis Boulevard
Post Office Box 710
Whiting, Indiana 46394-0710
219-473-7700

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 28, 2000

Mr. Terry Ressler
Water Enforcement Section
Office of Enforcement
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

Dear Mr. Ressler:

Per my phone messages to you on March 23, 2000, this memo documents our notification of the following as required by our NPDES permit (IN0000108) in section III.1. At approximately 10:30 a.m. March 23, 2000, the noncontact cooling water supply to the refinery's 11C Pipestill was interrupted. In order to prevent equipment damage, firewater was substituted for noncontact cooling purposes as allowed in our NPDES permit (section III.1). The substitution only occurred for 10 minutes; thus, at approximately 10:40 a.m. March 23, 2000, the use of firewater was discontinued.

Please call me at 219-473-3740 if you have any questions.

Sincerely,

Peter B Beronio for NY

Peter B. Beronio
Health, Safety and Environment
Environmental Engineer

State Form 47989(R/4-97)

IDEM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER MANAGEMENT
NPDES Facility Inspection Report

100 NORTH SENATE AVENUE
P. O. BOX 6015
INDIANAPOLIS, IN 46206-6015

NPDES PERMIT #:	YR/MO/DAY:	INSPECTION TYPE:	INSPECTOR:	FACILITY TYPE CODE:
IN 0000108	99-09-08	C	S	☐1 ☒2 ☐3 ☐4 ☒Major ☐Minor ☐Municipality ☒Industry ☐Semi-Public ☐State

OVERALL FACILITY EVALUATION RATING: 3
Inspection conducted on 9-8-99 + 9-9-99

COMPLIANCE STATUS: ☐ Non-Compliance ☒ Compliance

Name and Location of Facility Inspected:
Amoco Oil Company
2815 Indianapolis Blvd
Town/City: Whiting, IN County: Lake 46394

Receiving Waters/POTW: Lake Michigan + IHSC
Entry Time: Exit Time:
Permit Effective Date: 4-1-90
Permit Expiration Date: 2-28-95

Name(s) of On-Site Representatives:	Title(s):	Phone:
Pete Beronio	Environmental Engr	(219) 473-3740
Natalie Grimmer	Environmental Engr	Fax: ( ) -5417
Steve Warzyniak	Operator (optimization Engr)	Phone: ( ) -3276
		Fax: (219) 473-5379

Certified Operator: David Olen
Number: 14118
Class: D Exp: 6-00
☒ Full Time ☐ Part Time (Hours per week: _____)

Name, Address of Responsible Official: Colin H. J. MacLean
Title: Whiting Refinery Business Unit Leader
Phone: (219) 473-3149
Fax: ( )
Contacted: ☒ Yes Stan Sorrels ☐ No

Stan Sorrels, Health, Safety and Environmental 473-3859

Areas Evaluated During Inspection
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated, N/A=Not Applicable)

(2)	S	Effluent	S	Facility Site Review	(3)	M	Flow Measurement	N/A	Pretreatment
(2)	S/M	Receiving Waters LM/IHSC	S	Operation & Maintenance	(4)	S	Laboratory	—	Other:
(1)	M	Permit Expired	N/A	CSO/SSO (Sewer Overflow)		S	Self-Monitoring Program	(4) S	Sampling
	N	Compliance Schedules	S	Sludge Disposal Incineration + HG waste		S	Records/Reports	(5) S	Heat Rejection Rate

COMMENTS: (1) The permit expired in 1995, and Amoco did re-apply in 1994. In 1998 Amoco submitted a revised mixing zone demonstration (Vol. IIR).

(2) There have been zero NPDES permit limit exceedences in 1999, through July. Both outfalls 001 and 002 were clear and were not producing oil sheens on Lake Michigan at the time of this inspection. Outfall 001 did have a brownish color, but no discoloration of Lake Michigan was observed, and the effluent was clear (free of turbidity and solids). There was no discharge at outfalls 003 and 004, as observed on 9-9-99. Oil sheens were observed on the IHSC, near outfall 004, but these sheens were not attributable to outfall 004, since there was no discharge on 9-9-99, and none recorded for the last few months at outfall 004.

Name(s) and Signature(s) of Inspector(s):	Date:	Office/Telephone:
Michael Kuss	9-9-99	IDEM 219 881-6712 (317) 233-2494
Received By:	**Date:**	**Referred to:**
Section Chief:	**Date:**	**For:** ☐ Follow-up ☐ Enforcement ☐ NPDES ☐ Other
[signature]	9/27/99	

DISTRIBUTION: White - Public File; Canary - Site Copy; Pink - Inspector; Goldenrod - Supervisor

KEY TO REPORT

INSPECTION TYPE:

R:	RECONNAISSANCE	C:	COMPLIANCE EVALUATION
I:	INDUSTRIAL USER INSPECTION W/PRETREATMENT		

INSPECTOR:

S:	STATE	R:	EPA REGIONAL

FACILITY TYPE CODE:

1:	MUNICIPALITY	2:	INDUSTRY / SEMI-PUBLIC
3:	AGRICULTURAL	4:	FEDERAL

OVERALL FACILITY EVALUATION RATING:

5:	SATISFACTORY	(COMPLIANCE)
3:	MARGINAL	(BORDERLINE)
1:	UNSATISFACTORY	(NON COMPLIANCE)

OFFICE OF WATER MANAGEMENT - INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WASTEWATER TREATMENT PLANT INSPECTION FORM

NPDES PERMIT # IN 0000108

~~MUNICIPALITY~~ Amoco Person Interviewed

COMMENTS and/or RECOMMENDATIONS:

(3) The flow measurement at outfall 001 is not measured by a separate flow meter dedicated to this outfall. The flow value is calculated by measuring the influent to the treatment facility and subtracting out measured flow for various "waste streams".* The NPDES permit specifies that the discharge flow be measured continuously at outfall 001. It is recommedded that Amoco install a flow meter which will continuously measure the actual discharge flow from outfall 001.
*(see attached calculation sheet for 9-7-99).
When conducting flow measurement calibrations it is recommended that the meters be tested at 25% increments of total scale (0, 25%, 50%, 75% and 100%). This will assure accuracy throughout the expected flow range.

(4) The overall rating given to the laboratory is satisfactory, however the following recommendations are made: samples for pH should be analyzed immediately (within 2 hours as per standard methods); samples for res. Cl_2 should be analyzed immediately (within 30 minutes as per standard methods); samples for Cl_2 should have the time of analyzation recorded and should be reported as mg/L Cl_2; improvements could be made to the sampling chain of custody forms.

Inspector:

STATE FORM 44229 (7-90)

OFFICE OF WATER MANAGEMENT - INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WASTEWATER TREATMENT PLANT INSPECTION FORM

NPDES PERMIT # IN 0000108

~~MUNICIPALITY~~ Amoco Person Interviewed _____

COMMENTS and/or RECOMMENDATIONS:

(5) There are no thermal limitations for outfall 001 and the temperature limit for outfall 002 is NOT a temperature limit, but a heat ejection rate limitation. The limit at 002 is:

2.0×10^9 BTU/hr (Daily MAX ~~Avg~~ Avg) ~~(assumed misprint or page 4 of 21)~~.
1.7×10^9 BTU/hr (monthly Avg)

Amoco calculates the BTU/hr rate by recording the intake and discharge temperatures 12 x Daily and then using the intake average temperature and discharge average temperature to calculate the Daily Average BTU/hr rate. Amoco has complied with these limitations, but the actual discharge temperatures at both outfalls 001 and 002 are relatively high. Outfall 001 was 101°F and outfall 002 was 102°F on 9-7-99.

Inspector: _____

INDUSTRIAL INSPECTION

State Form 35969 (R2/2-94)

☒ Satisfactory
☐ Marginal
☐ Unsatisfactory

Indiana Department of Environmental Management
Office of Water Management
105 S. Meridian Street
Indianapolis, Indiana 46225

Name of inspector: Michael Kuss

Name of company: AMOCO OIL COMPANY

Date (month, day, year): 9-8-99

Address of company (street and number or Rural Route): 2815 INDIANAPOLIS BLVD

City: Whiting | County: Lake | Telephone number: (219) 473-5417

ZIP code: 46394 | Name of responsible official: COLIN H. J. MACLEAN

Name(s) of individual(s) contacted: Pete Beronio Natalie Grimmer Environmental engrs.

Permit number: IN0000108 | Name of receiving stream and/or POTW: Lake Michigan FIHSL

Type sewage disposal: city of whiting → HAMMOND | Name of certified operator: DAVID OLEN

Number of employees: 1500 | Class: D | Number: 14118

Type of inspection
☐ O & M ☒ CEI ☐ CSI ☐ Follow-up ☐ Pretreatment
☐ Other (specify) _____
☐ Products gasoline, heating fuel, Jet fuel, diesel fuel, Asphalt and coke

Outfall	Water Use	Treatment	July Waste Flow 99	Appearance
001	All process + stormwater	* (see below)	18.0 MGD	Brownish in color, clear, no oilsheen
002	All non-contact	Oil separator	105 MGD	clear, no oilsheen
003	stormwater	Oil water separator ~~none~~	No Discharge	No Discharge
004	stormwater	none	No flow data	No Discharge

Other water uses ~~Grit~~ ~~API~~ Grit removal, API separation, Equalization, DAF, Activated sludge, clarification, filtration

EFFLUENT DATA
mg / 1 / (lb/d)

Parameter							
Permit Limits Daily Max.		See	ATTACHED	SUMMARY	OF	VIOLATIONS	
Daily Avg.		for	1997,	1998 +	1999	and	
Actual Data Daily Max.		copy	~~of July 1999 MRO.~~				
Daily Avg.		The	WATER	QUALITY	DATA	For	September

Period covering:

Comments

1999 SUMMARY OF NPDES PERMIT LIMIT VIOLATIONS

FACILITY AMOCO
NPDES PERMIT No. IN 0000108

1999
LIST OF NPDES PERMIT LIMIT VIOLATIONS

MONTH	DATE(S)	TYPE	OUTFALL	PARAMETER	REPORTED VALUE	PERMIT LIMIT	PERCENT DEVIATION
JAN	NONE						
FEB	NONE						
MAR	NONE						
APR	NONE						
MAY	NONE						
JUNE	NONE						
JULY	NONE						
TOTAL NUMBER OF VIOLATIONS:							

DMx - Daily Maximum
DMn - Daily Minimum
MA - Monthly Average
WA - Weekly Average

Report Prepared by Michael Kuss Title ENVIRN ENG 2 - IDEM

1998 SUMMARY OF NPDES PERMIT LIMIT VIOLATIONS

FACILITY Amoco Oil Co.
NPDES PERMIT No. IN 0000108

1998
LIST OF NPDES PERMIT LIMIT VIOLATIONS

MONTH	DATE(S)	TYPE	OUTFALL	PARAMETER	REPORTED VALUE	PERMIT LIMIT	PERCENT DEVIATION
JAN	NONE						
FEB	NONE						
* MAR	3-9-98	DMX	001	BOD	9674 lb/d	8164 lb/d	
	3-10-98	DMX	001	BOD	19833 lb/d	8164 lb/d	
	3-9-98	DMX	001	COD	63782 lb/d	58427 lb/d	
	3-10-98	DMX	001	COD	75429 lb/d	"	
	3-9-98	DMX	001	TSS	46402 lb/d	5694 lb/d	
	3-10-98	DMX	001	TSS	61159 lb/d	"	
	3-98	MA	001	TSS	6698 lb/d	3646 lb/d	
	3-9-98	DMX	001	O+G	2705 lb/d	2600 lb/d	
	3-10-98	DMX	001	O+G	2723 lb/d	"	
	3-11-98	DMX	002	O+G	6.6 mg/L Δ	5.0 mg/L Δ	
APR	NONE						
~~MAY~~	~~NONE~~						
~~JUNE~~							
MAY	5-20	DMX	002	RES. Cl2		0.05 mg/L	
JUNE	NONE						
JULY	NONE						
AUG	NONE						
SEPT	NONE						
OCT	NONE						
NOV.	NONE						
DEC	NONE						
TOTAL NUMBER OF VIOLATIONS:			11				

*NOTE: EACH OF THE EXCEEDENCES IN MARCH WERE THE RESULT OF A COMPLETE POWER OUTAGE AT THE REFINERY, AS A RESULT OF THE SEVERE WINTER STORM THAT AFFECT NORTHWEST INDIANA ON 3-9-98. THE POWER OUTAGE CAUSED AN UPSET CONDITION AT THE TREATMENT FACILITY, AS PER AMOCO'S LETTER DATED 3-31-98. (SEE ATTACHED COPY).

DMx - Daily Maximum
DMn - Daily Minimum
MA - Monthly Average
WA - Weekly Average

Report Prepared by Michael Kuss Title ENVIRN. ENGR. - IDEM

1997 SUMMARY OF NPDES PERMIT LIMIT VIOLATIONS

FACILITY AMOCO

NPDES PERMIT No. IN 0000108

1997

LIST OF NPDES PERMIT LIMIT VIOLATIONS

MONTH	DATE(S)		TYPE	OUTFALL	PARAMETER	REPORTED VALUE	PERMIT LIMIT	PERCENT DEVIATION
JAN	NONE							
FEB	NONE							
MAR	3-9-97		DMX	004	pH	9.1	9.0	
APR	NONE							
MAY	NONE							
JUNE	NONE							
JULY	7-11-97	OIL	SHEEN	002	Reported at 002, on Lake Michigan			
	7-28-97	OIL	SHEEN	002	Reported at 002, on Lake Michigan			
AUG	NONE							
SEPT	9-13-97	OIL	SHEEN	002	Reported at 002, on Lake Michigan			
OCT	10-10-97	OIL	SHEEN	002	Reported at 002, on Lake Michigan			
NOV	11-22-97	OIL	SHEEN	002	Reported at 002, on Lake Michigan			
DEC	NONE							

TOTAL NUMBER OF VIOLATIONS: (1) + Plus Five (5) Reported Oil Sheens

DMx - Daily Maximum
DMn - Daily Minimum
MA - Monthly Average
WA - Weekly Average

Report Prepared by Michael Kuss Title Envir. Engr - IDEM-OWM

RBB

Amoco Petroleum Products
Refining Business Group
Whiting Refinery
2815 Indianapolis Boulevard
Post Office Box 710
Whiting Indiana 46394-0710
219-473-7700

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 31, 1998

Mr. Stephen Judith
Indiana Department of Environmental Management
Office of Enforcement
Water Enforcement Section
100 North Senate Street
P.O. Box 6015
Indianapolis, IN 46206-6015

Upset Conditions Resulting from March 9 Power Outage

On March 9, 1998 the Amoco Whiting Refinery and the refinery's wastewater treatment plant (WWTP) experienced a complete power outage as a result of the severe winter storm and ensuing NIPSCO area-wide power outage. As a direct result of the power outage, the WWTP experienced an upset condition, resulting in NPDES permit exceedances. The following information documents these issues.

Description of Power Outage

A severe winter storm with extremely high winds, wet snow and ice, impacted Northwest Indiana on March 9, 1998. That morning, the NIPSCO Electrical Grid for Northwest Indiana experienced power outages. This grid supplies Amoco and is considered to be a highly reliable system. However at 8:39am, weather conditions caused NIPSCO's Sheffield substation connection to the refinery to be lost. Normally the loss of this connection would not have presented an immediate problem since a second electrical connection from NIPSCO's Marktown substation to the refinery is also in place. Yet, sixteen seconds after losing the Sheffield connection, NIPSCO's electric generation source to the Marktown substation was also lost. Thus, the supply of electrical power from NIPSCO to the refinery was completely lost.

Since Amoco's internal power station cannot produce all the electricity the refinery requires, the refinery's electrical load-shed system automatically started tripping process unit breakers, according to a prioritized schedule, shutting down many of the refinery's process units. The WWTP is considered high priority and is not on this load-shed list; it receives power as long as the power station is operational.

However, at 8:52am, when the Amoco power station could not handle the remaining load, the WWTP was among the units that lost electrical power.

Effect of Power Outage on WWTP Operations.

The loss of power to the WWTP resulted in the following equipment outages (please refer to the attached WWTP flow diagram):

- All pumps in the pretreatment section of the WWTP were unoperable. Incoming flow built up in the the oil-water separator and air flotation unit.
- Due to loss of compressed air, the air flotation unit could not remove dissolved oil and suspended solids. This allowed unusually high loadings of dissolved oil and grease and suspended solids to the aeration tanks when flow was reestablished.
- Surface aerators lost power. The residual dissolved oxygen that is normally maintained in the aeration tanks was quickly consumed, within minutes of the power outage. This led to near-anaerobic conditions in the aeration tanks while the aerators were shut down.
- The clarifier recycle pumps were unoperable.
- The final filter backwash pumps were unoperable.
- Due to blizzard, sub-freezing conditions and the loss of steam tracing, which is used for freeze protection, many critical indicators and controllers were frozen.

Recovery of WWTP Operations on March 9

As discussed above, all refinery process units, including the WWTP, were shut down due to the power outage. The NIPSCO Marktown substation connection to the refinery was reestablished first and the WWTP's electrical power supply was reestablished by approximately 10:30am, resulting in a power outage of approximately 90 minutes. Although the WWTP was the first refinery unit to be restored to operation, many refinery process units were shut down for several days and some as long as 10 days.

WWTP personnel were able to restore most major equipment operation by early afternoon. This included pumps required to reestablish flow through the plant, including the clarifier recycle pumps and final filter backwash pumps. The aeration tank surface aerators were reactivated.

Steam and air supply remained out-of-service throughout the refinery until later in the day. Given the blizzard and sub-freezing conditions, instrumentation froze and had to be manually thawed with steam hoses and restarted. Due to these instrumentation problems, flow to the storm surge and equalization tanks was not reestablished until later in the day.

Until the air supply was reestablished later in the afternoon, the air flotation unit was not effective in removing suspended solids and dissolved oil from the

wastewater, resulting in very high loadings of suspended solids and dissolved oil and grease to the aeration tanks.

Summary of Exceedances

Loss of power to the WWTP resulted in an upset condition. As discussed, unusually high loadings of suspended solids and dissolved oil to the aeration tanks, combined with the earlier period of anaerobic conditions (while the aerators were shut down), resulted in highly-stressed activated sludge. This resulted in severe foaming in the aeration tanks and clarifiers.

Although the clarifier beds were maintained during this incident, some of the foaming activated sludge did not sufficiently settle in the clarifiers. This condition overwhelmed the final filters and resulted in high suspended solids levels in the effluent. Final filters were backwashed one every 20 minutes (the maximum rate possible), as opposed to the normal frequency of one every 60-90 minutes. This demonstrates that operational measures available to the WWTP to mitigate the extent of the exceedances were implemented.

In addition, high loadings of dissolved oil and grease to the activated sludge reactors led to high levels in the effluent. The combination of high levels of both suspended solids (TSS) and oil and grease (O&G) led to high levels of both chemical oxygen demand (COD) and biological oxygen demand (BOD) in the effluent. The daily maximum permit limits for TSS, O&G, COD and BOD were exceeded on March 9. Since the upset condition continued into March 10, these limits were also exceeded on March 10. Notifications of these exceedances were made to IDEM, Office of Enforcement. Below is a summary of NPDES permit exceedances for Outfall 001 (WWTP effluent) on March 9 and 10.

as pounds/day	TSS	O&G	COD	BOD
March 9	46,402	2,705	63,782	9,674
March 10	61,159	2,723	75,429	19,833
March 11	1,348	749	7,040	1,168
Daily Maximum Limit	5,694	2,600	58,427	8,164

Since Wednesday, March 11, all NPDES daily maximum permit limits for Outfall 001 have been met. In fact, WWTP operating data indicate that the effluent quality was much improved by noon on Tuesday, March 10. Given the magnitude of equipment outages on March 9 and the subsequent upset conditions, this demonstrates that effective measures were taken by WWTP personnel to return the WWTP to a highly functional state in an expedited manner.

Although not an exceedance of a daily maximum permit limit, there was also an unsightly appearance at Outfall 001 on March 17. A film was observed within 25 feet of the outfall and discoloration within 100 feet. IDEM, Office of Enforcement, was notified of this condition as well. This outfall condition cleared up over the next several days. As mentioned earlier, a foam layer had built up on top of the clarifiers during the upset condition. This foam slowly sloughed-off the clarifiers; however, the filters were not completely effective in removing it.

There was one exceedance on March 11 for O&G for Outfall 002, the once through cooling water (OTCW) effluent. This was also related to the power outage. Heat exchangers on the OTCW system were kept as warm as possible during the shut-down period with OTCW. However, heat exchanger operating conditions were very different during the shut-down than normal operating conditions, especially pressure and temperature conditions. This led to a small heat exchanger leak. Operating conditions were adjusted and the leak was stopped. Monitoring of heat exchanger systems throughout the refinery was enhanced throughout the refinery start-up period. There were no further Outfall 002 exceedances.

NPDES Permit Definition of "Upset"

The permit exceedances discussed above were unintentional and temporary and were due to factors beyond the reasonable control of the permittee. The WWTP is well-operated, well-maintained, and designed to readily meet its NPDES permit conditions. This is demonstrated by the refinery's excellent NPDES permit record. No operational errors contributed to the exceedances.

In accordance with NPDES Permit No. IN0000108 (Part II, Section B, Paragraph 3.C), the following addresses conditions necessary to demonstrate an upset.

1. The cause of the upset was identified as the NIPSCO power outage, which was caused by severe and unusual winter storm weather conditions.

2. The WWTP was at the time of the upset being operated according to proper operation and maintenance procedures.

3. The refinery and the WWTP took all reasonable steps, including the following, to minimize any adverse impact to the environment resulting from the upset.

   First, full operation of the WWTP was achieved as quickly as possible. The WWTP was first refinery unit to regain power. In fact, most of refinery units remained out of service for up to several days afterward, some up to 10 days. In spite of highly adverse weather conditions, instrumentation freeze-ups and other difficulties, the WWTP was running by early afternoon and was fully operational by late afternoon of March 9.

Second, WWTP operational measures were taken to minimize the impact of the upset. At no time during the upset was wastewater flow bypassed around any of the WWTP operating units. Surge capacity was used. Final filter backwash frequency was increased to the maximum rate. Clarifier beds were maintained.

Third, in order to reduce wastewater flow to the WWTP, the watershedding system was activated: all wellpoint systems were temporarily shutdown; tank waterdraws were delayed; cooling tower blow-downs were blocked in; desalter brine and mudwashes and other refinery process related flows were not in service for several days.

Fourth, in order to reduce slop oil flow to the WWTP's oil-water separator several vac trucks were operated within the refinery around the clock for several days.

Fifth, as the refinery process units were brought back in service, measures were taken to mitigate any impact on WWTP operations. As a result, the WWTP was able to meet its permit limits with its NPDES permit even though essentially the entire refinery had to be brought back in service.

Summary

As a direct result of the NIPSCO power outage on March 9, which was caused by severe and unusual winter storm weather conditions, the WWTP experienced an upset condition. Daily maximum NPDES permit limits for Outfall 001 (WWTP effluent) were exceeded on March 9 and March 10. Full operation of the WWTP was restored by the afternoon of March 9. Outfall 001 maximum daily permit limits were met March 11. Also upset-related, Outfall 002 (once through cooling water) experienced an exceedance on March 11, and Outfall 001 had an unsightly appearance on March 17.

If you have any questions regarding the upset condition described above, or any other issue, please call me at 219-473-3740.

Peter B. Beronio

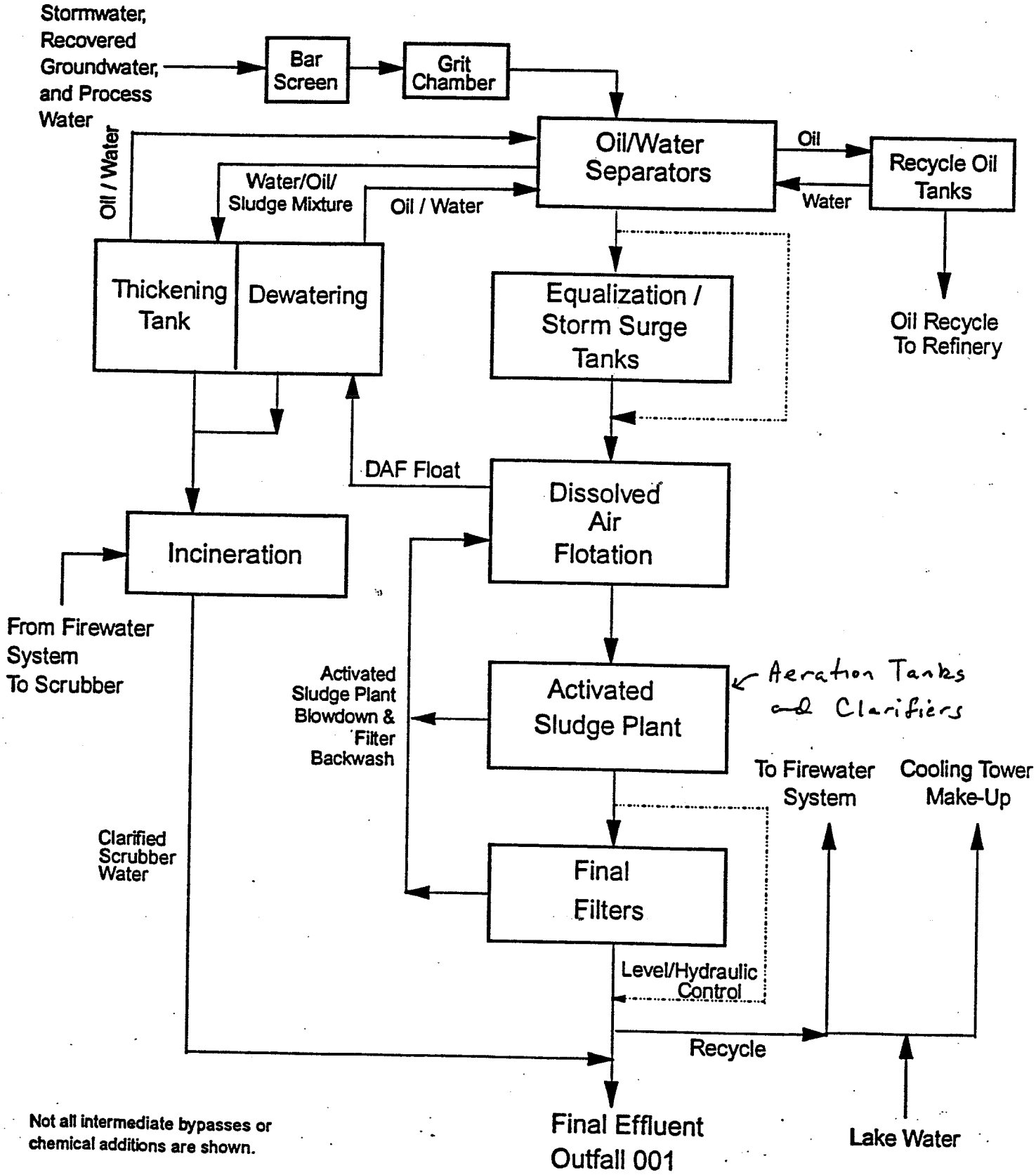
Peter B. Beronio
Environmental, Health and Safety
Team Leader - Water

Cert. # P353 264 659

Attachment

Wastewater Treatment Plant - Water Flow Diagram

Amoco Oil Company - Whiting Refinery



Not all intermediate bypasses or chemical additions are shown.

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