STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2445-AOP-R5 AFIN: 47-01073

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Exploratory Ventures, LLC
2027 E State Highway 198
Osceola, Arkansas 72370-0248

3. PERMIT WRITER:

Jesse Smith

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Iron and Steel Mills and Ferroalloy Manufacturing
NAICS Code: 331110

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
10/24/2025	Modification	Removal of coil coating line Overhaul of DRI process Additon of new sources SN-152 through SN-167

6. REVIEWER'S NOTES:

Exploratory Ventures, LLC (EV) owns and operates a steel mill located at 1000 East County Road 860 in Osceola, AR. This facility is contiguous to an existing Big River Steel (BRS) facility, AFIN: 47-00991, and both belong to the same industrial grouping (2-digit "Major Group" Standard Industrial Classification (SIC) code), are located on one or more contiguous or adjacent properties, and are under common ownership. Thus, the BRS and EV facilities constitute a single stationary source under the Clean Air Act. At

the request of the BRS facility and the EV facility for administrative convenience, this permit is issued specific to the equipment located at the EV facility.

This permit modification makes the following changes to the permit:

- Removed the previously permitted coil coating line, SN-40 through SN-46, and associated subpart requirements.
- Revised the total heat input for natural gas space heaters, SN-35.
- Added two boilers to the cold mill, SN-152 and SN-153.
- Added five additional cooling towers, SN-61b, SN-62b, SN-133b, SN-164a, and SN-164b.
- Added six new emergency generators, SN-154 through SN-159.
- Added two reformer furnaces to the hydrogen plant, SN-160 and SN-161
- Added an HVOF shot blast process, SN-167.
- Reworked all of the previously permitted DRI process, now SN-116 through SN-129.
- Added two boilers and HPO processes to the acid regeneration plant, SN-162, SN-163, SN-165a, SN-165b, SN-166a, and SN-166b.
- Added an additional insignificant activity.

The permitted emission changes to this permit as a result of this modification are as follows: increase of 114.3 tpy PM, increase of 101.7 tpy PM_{10}, increase of 93.0 tpy $PM_{2.5}$, increase of 15.9 tpy SO_2, decrease of 137.1 tpy VOC, increase of 9852.5 tpy CO, decrease of 99.2 tpy NO_X, decrease of 0.19 tpy Lead, decrease of 25.24 tpy Single HAP, decrease of 55.38 tpy Total Other HAPs, increase of 0.3 tpy Cl, increase of 0.30 tpy HCl, increase of 1.9 tpy NaOH, and decrease of 4545 tpy CO_2e.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The facility has not yet been inspected for the air permit and has no outstanding enforcement actions. This is only in relation to the Exploratory Ventures facility and not the Big River Steel facility.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y
If yes, were GHG emission increases significant? Y

b) Is the facility categorized as a major source for PSD? Y
- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01 and 02	Particulate	NSPS AAa
01 and 02	HAPs	Case by Case, 42 USC § 7412
All Boilers	None	NSPS Dc
SN-23b, SN-26, SN-38, SN-138, SN-140, SN-165a, and SN-165b	HAP	NESHAP CCC
SN-24, SN-27, SN-28, SN-37, SN-152, SN-153, SN-160, SN-161, SN-162, and SN-163	HAP	NESHAP DDDDD
SN-01 through SN-136	NO_X, CO, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, lead, and greenhouse gasses.	PSD
SN-143 through SN-149 SN-152 through SN-167	NO_X, CO, PM_{10}, $PM_{2.5}$, and greenhouse gases	
Generators	Criteria and HAPs	NSPS IIII, NSPS JJJJ, and NESHAP ZZZZ
SN-115	HAPs	Case by Case, 42 USC § 7412
SN-148	HAPs	NESHAP N

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/a				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any 8 CAR pt. 40 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/a		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

The results of dispersion modeling are summarized below.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Highest Concentration ($\mu g/m^3$)	% of NAAQS
PM_{10}	155.3	150	24-Hour	52.7	35.2%
$PM_{2.5}$	146.9	12.0	Annual	8.8	73.4%
		35	24-Hour	28.5	81.5%
CO	3518.5	10,000	8-Hour	2740.2	27.5%
		40,000	1-Hour	8329.1	20.9%
NO_x	1148.0	100	Annual	16.6	16.6%
		188	1-hour	184.8	98.3%

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein	0.11	0.0121	3.12E-05	Y
Arsenic	0.01	1.10E-03	3.47E-04	Y
Benzene	0.07	7.70E-03	6.4E-03	Y
Beryllium	0.00005	5.5E-06	2.08E-05	N
Cadmium	0.01	1.10E-03	1.91E-03	N
Chromium	0.5	5.50E-02	2.43E-03	Y
Chlorine	0.29	0.0319	1.44	N
Cobalt	0.02	2.20E-03	1.46E-04	Y
Formaldehyde	0.12	1.32E-02	0.13	N
Hydrogen Chloride	2.99	0.3289	4.29	N
Manganese	0.1	1.10E-02	6.59E-04	Y
Mercury	0.01	1.10E-03	4.51E-04	Y
Napthalene	0.1	1.10E-02	3.64E-03	Y
Selenium	0.2	2.20E-02	4.16E-05	Y

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Beryllium	5.00E-07	3.06E-08	Y
Cadmium	1.00E-04	2.81E-06	Y
Chlorine	2.9	2.12E-03	Y
Formaldehyde	1.20E-03	1.92E-04	Y
Hydrogen Chloride	29.9	6.30E-03	Y

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: No H_2S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
SN-01 through SN-136, SN-142, SN-152 through SN-167	All criteria pollutants based on BACT limits	-	-	-	-
01 and 02 HAPs	AP-42	Varied	Baghouse	99%+	-
Natural Gas HAPs	AP-42	Varied	None	-	-
Pickling Lines HCl	Manufacturer Estimates	Varied	Scrubbers	-	-
SN-137a, b, and c	AP-42 13.2.4	0.03 gr/scf $PM/PM_{10}/PM_{2.5}$	Baghouse	99%	-
SN-138	AP-42 13.2.4	0.03 gr/scf $PM/PM_{10}/PM_{2.5}$	Venturi, Cyclone, Absorber, Scrubber per each Roaster system	99%	-
SN-138 SN-140	NESHAP CCC	12 ppmv HCl 6 ppmv Cl_2			

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 and 02	PM, PM_{10}, $PM_{2.5}$	5D and 201 or 201A	Initial and annual	NSPS and PSD limit verification
01 and 02	AAa required information (fan	None specified	Initial and annual	NSPS requirement

SN	Pollutants	Test Method	Test Interval	Justification
	motor amps, etc.)			
01 and 02	NO_x, SO_2, CO, CO_2, VOC	7E, 6C, 3A, 10, 25A	Semi annually	To verify compliance with BACT emission rates
01 and 02	Lead	12	Annually	To verify BACT limits
03 and 04	Flare design	40 CFR 60.18(b) through (f)	Initial only	To verify flare is design is capable of achieving BACT limits
24, 27, 28, 37, 152, 153	$PM_{2.5}$, CO, and NO_x	Method 202, 10, and 7E	Initial and every 5 years	To show compliance with BACT limits
23b, 26, and 38	HCl	Method 26	Initial	Demonstration of Compliance with Applicable provisions of NESHAP Subpart CCC
Cooling Towers	TDS	TDS Testing	Initial and every 6 months	Verification of BACT Limits
123	Flare design	40 CFR 60.18(b) through (f)	Initial only	To verify flare is design is capable of achieving BACT limits
138, 140, 165a, and 165b	HCl and Cl_2	40 CFR §§ 63.1161(d) and 63.1162(a)(1)	Initial and annually, unless alternative schedule approved	Demonstration of Compliance with Applicable provisions of NESHAP Subpart CCC
142 and 143	NO_X	Method 7E	Initial and annual	To verify compliance with BACT emission rates

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01 and 02	AAa required monitoring	Fan amps, damper positions, etc.	Vary according to reading	Y
46	RTO temperature	Thermocouple	Continuous (3hr averages)	Y

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01 and 02	AAa Records	None	Vary	Y
03 and 04	Steel Throughput	2,050,000 tons/rolling twelve months	Monthly	Y
23b, 26, 38, 138, and 140	CCC Records	None	Vary	Y
24, 27, 28, 37, 152, 153, 160, 161, 162, and 163	DDDDD Records	None	Vary	Y
Emergency Generators and Water Pumps	Hours of Operation	100 hours/year	Monthly	Y
93, 95, 97, 99, 103, 118, 121	Materials Received per Rolling Twelve Months	175,830 79,204 175,830 680,00 210,240 3,750,000 2,500,000	Monthly	Y
115	Gasoline Throughput	500,000 gallons per rolling twelve months	Monthly	Y
139	Throughput of Natural Gas	752.24 MMcf/yr	Monthly	Y
148	NESHAP N Records	None	Vary	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 and 02 Exhaust Stacks	3%	NSPS/BACT	Daily observations
01 and 02 Meltshop	6%	NSPS/BACT	Daily observations
03 and 04	5%	BACT/Division Guidance	Weekly observations
Natural Gas Burners	5%	BACT/Division Guidance	Combustion of natural gas only
Cold Mill Operations	5%	BACT/Division Guidance	Weekly observations
Cooling Towers	5%	BACT/Division Guidance	Proper Maintenance
Emergency Generators	20%	NSPS/Division Guidance	Combustion of low sulfur diesel only
93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 113, 114, 115, SN-115a, SN-147a, SN-147b, SN-147c, SN-148, SN-160, SN-161, SN-167	5%	BACT/Division Guidance	Weekly observations
91, 92, 104, 105, 106, 107, 108, 109, 110	20%	BACT/Division Guidance	Weekly observations
116, 117, 119, 120, 122 through 128	5%	BACT/Division Guidance	Weekly observations
118 121	20%	BACT/Division Guidance	Weekly observations
137a-c, 139, 162, 163, 166a, 166b	5%	Rule 19.705 *et seq.* and 40 C.F.R. § 52 Subpart E	Weekly observations
138, 140, 165a, 165b	20%	Rule 19.705 *et seq.* and 40 C.F.R. § 52 Subpart E	Weekly observations
141a, 141b	20%	Rule 19.705 *et seq.* and 40 C.F.R. § 52 Subpart E	Combustion of natural gas only

20. DELETED CONDITIONS:

Former SC	Justification for removal
46 through 53	SN-40 through SN-46 removed, subpart requirements removed.
104 and 107	Tank is not enclosed, subpart requirement unnecessary.

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Laboratory Test Furnaces	A-1	0.0007	0.0001	0.0005	0.0074	0.0088	0.0005	0.0005
SMS ESP Roll Shop Parts Washer	A-1	0.03	0.003	0.02	0.4	0.4	4.05E-04	4.05E-04
Diesel Fuel Tanks	A-3			0.0013				
Engine Oil Tanks	A-3			0.000013				
Laboratory Equipment	A-5			0.0005			0.0005	0.0005
Steel Cutting / Shredding Operations	A-7	1.1					0.003	0.006
Railcar Cutting Operations	A-7	1.1					0.003	0.006

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2445-AOP-R4

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Exploratory Ventures, LLC
Permit #: 2445-AOP-R5
AFIN: 47-01073

$/ton factor	28.14	Annual Chargeable Emissions (tpy)	2803.12
Permit Type	Modification	Permit Fee $	1000

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	-116.19
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		393.1	507.4	114.3		
PM_{10}		451	552.7	101.7	101.7	552.7
$PM_{2.5}$		419.2	512.2	93		
SO_2		453.5	469.4	15.9	15.9	469.4
VOC		416.8	279.7	-137.1	-137.1	279.7
CO		5397.8	15250.3	9852.5		
NO_X		1560.6	1461.4	-99.2	-99.2	1461.4
Lead	☐	1.455952	1.273138	-0.182814		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
CO2e	☐	3183051	3,173,381	-9670		
Single HAP	☐	28.65	3.41	-25.24		
Total Other HAPs	☐	60.55	5.17	-55.38		
Cl_2	☑	5.93	6.23	0.3	0.3	6.23
HCl	☑	18.34	18.65	0.31	0.31	18.65
Ammonia	☑	13.14	13.14	0	0	13.14
Sodium Hydroxide	☑	0	1.9	1.9	1.9	1.9